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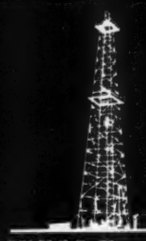

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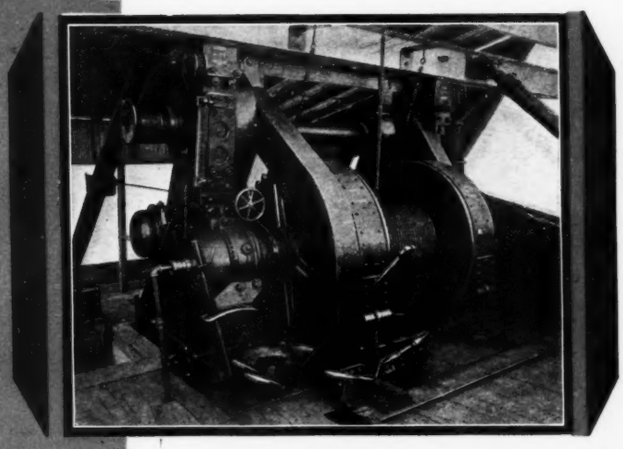

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The International Derrick & Equipment Co.

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How PHILLIPS PETROLEUM cuts maintenance costs

Above: DULUX improved machinery refinishing methods. Phillips used DULUX on this battery of compressors.

DULUX is being used on the new addition to the Phillips Petroleum Company's Administration Building at Bartlesville.

Below: HEAT, evaporation, corrosion keep out! Bright DULUX finishes reflect heat and bar corrosion at the 52 gasoline plants of the Phillips Petroleum Company.

One of the first oil companies to adopt DULUX and reduce upkeep expense in field, refineries, offices, filling stations, and on the road.

AMONG the first to make widespread use of one of the country's latest chemical developments is the Phillips Petroleum Company. This firm was co-operating with du Pont while chemists were still conducting their three-year tests of DULUX. It made Phillips' property and equipment available for the observation and testing of DULUX under conditions of actual service.

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Officials of the Phillips Company were intensely interested in du Pont tests. For these tests indicated that DULUX lasts from 50% to 100% longer than the oil or varnish types of finishes now commonly used that it retains its color and its gloss from 50% to 100% longer. They were attracted by the fact that DULUX is quick drying—gets property and equipment back in service in record time. The Phillips refineries, the offices, laboratories, filling stations, tank cars, tank trucks — all are now protected and improved with DULUX.

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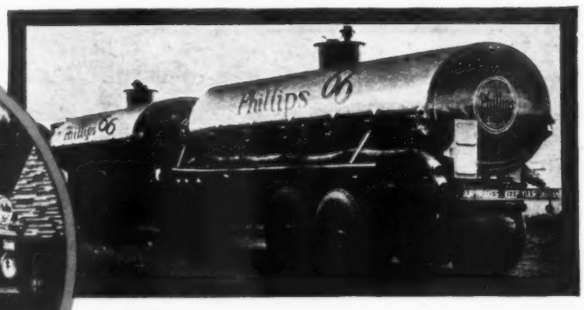

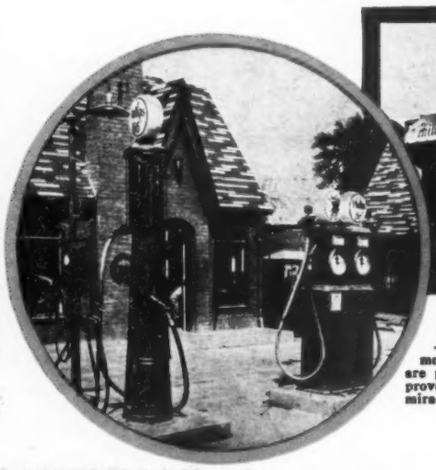

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The Oil and Gas Journal

PRODUCING REFINING ENGINEERING MARKETING

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Uncertainty Clouds Crude Oil Situation

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Difficulties Being Encountered in Mid-Continent and California May Result in Material Improvement Later

By Andrew M. Rowley

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

Uncertainty characterizes the crude oil situation, especially in the Mid-Continent area and in California. Action of the Prairie Oil & Gas Company in reducing its purchases to one-third of its former takings is a serious blow to hundreds of small producers in the Mid-Continent territory and may result in the shutting in of about 23,000 barrels daily of production from small wells as operators affected have no other outlet for their crude. Close observers of the situation in California feel convinced a material reduction in both crude oil and gasoline prices is imminent in that State.

Many feel the industry now is going through its darkest period and that present difficulties will result in a substantially improved situation later. The statistical position does not seem to have wielded any influence on the price structure for some time, hence the better showing recorded in the latest report of the Bureau of Mines might not receive the attention usually accorded it. That report shows a further reduction of both crude oil and gasoline stocks during October with another decline in production of crude oil.

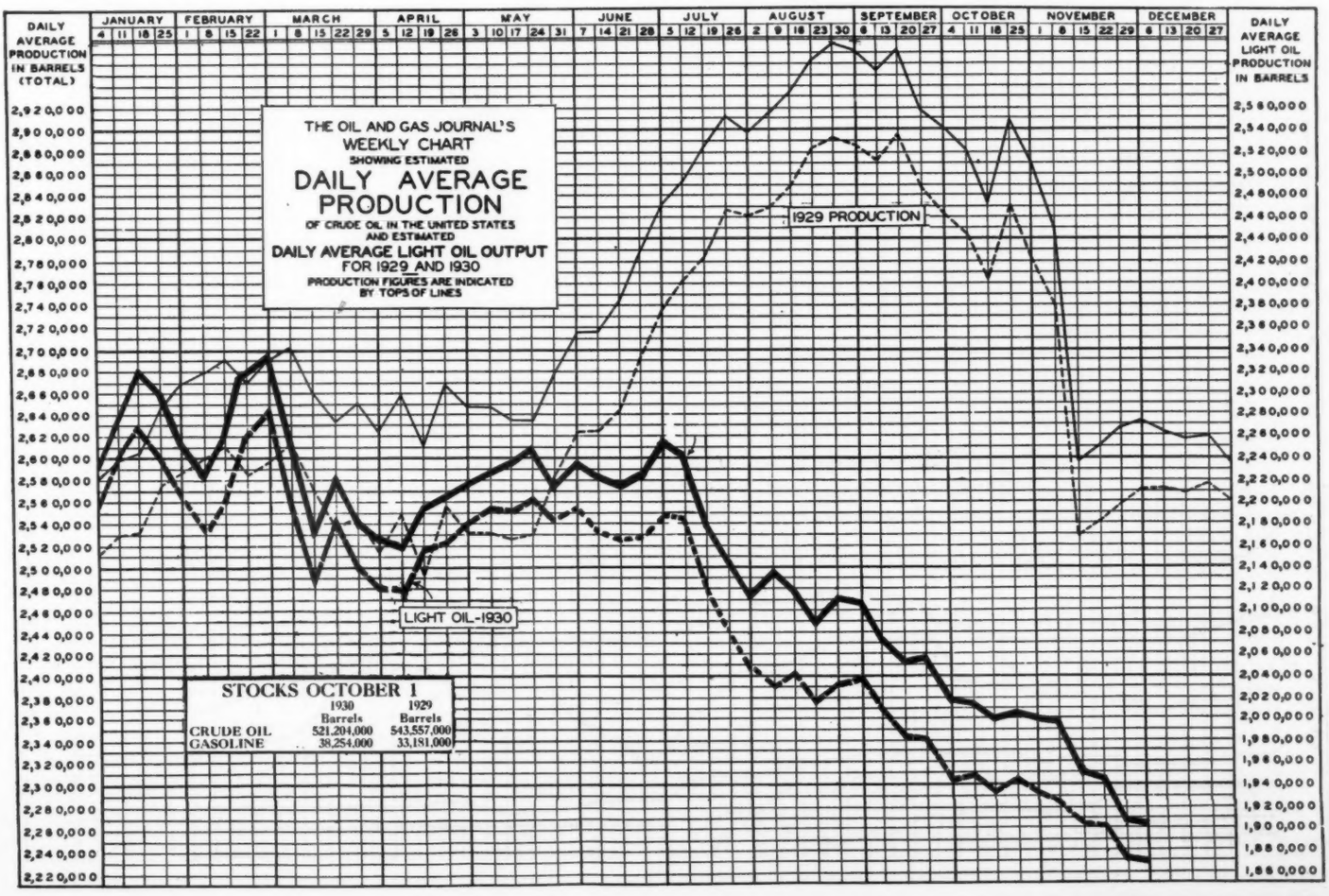
One thing, however, is certain. Continuation of the present curtailment of crude oil production and holding refinery operations strictly to current demands for gasoline will place the entire industry in such a position next spring prices more in line with costs will not only be justified but warranted. Higher prices for both crude oil and refinery gasoline must be obtained as one of the first steps to bring the industry out of its present difficulties. No one will deny that present prices are entirely too low. The only division of opinion on this subject is as to the proper time for increasing prices and what effect higher prices would have on the conservation movement.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended November 29 and a comparison with the previous week follows:

	Nov. 29		Nov. 22	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	92,735	.....	73,320	.....
Seminole-St. Louis	154,955	.....	168,215	.....
Remainder of State	238,720	.....	242,380	.....
Total Oklahoma	486,410	.....	483,915	.....
West Texas—				
Hendricks	56,515	.....	57,015	.....
Yates	104,245	.....	102,825	.....
Remainder	107,262	.....	108,779	.....
Total West Texas	268,022	.....	268,619	.....
North Louisiana	38,925	5,300	38,835	5,280
Arkansas	16,175	35,720	16,170	35,735
North Central Texas	105,070	.....	104,919	.....
Texas Panhandle	73,080	.....	75,868	.....
East Central Texas	41,656	.....	41,963	.....
Kansas	107,420	.....	109,185	.....
Total Mid-Continent area	1,136,758	41,020	1,139,474	41,015
Gulf Coast	.....	182,460	.....	180,539
Southwest Texas	.....	89,325	.....	89,581
Eastern	112,000	.....	112,000	.....
Rocky Mountain area	103,342	.....	102,021	.....
California—				
Santa Fe Springs	94,000	.....	93,750	.....
Long Beach	96,000	.....	97,500	.....
Playa Del Rey	42,500	.....	40,000	.....
Elwood	35,500	.....	41,000	.....
Ventura Avenue	49,000	.....	46,500	.....
Kettleman Hills	25,000	.....	24,750	.....
Remainder of State	176,000	84,500	177,000	85,000
Total California	518,000	84,500	520,500	85,000
Total United States	1,870,100	397,305	1,873,995	396,135
Grand total	2,267,405		2,270,130	

Total Decrease 2,725 Bbls.; Light Oil Decrease 3,895 Bbls.



Natural Gasoline Quotations Lower

All Grades Reduced in Oklahoma. Excess Refinery Gasoline Sold in Los Angeles and Other Western Points

By C. O. Willson

Except for natural gasolines prices on refined products were relatively steady in the Oklahoma (Group 3) market during the past week.

In the natural gasolines, Grade AA reached the 4-cent level the first of the week, a decline of three-eighths cent when compared with the prevailing market of the previous week. Although little Grade A is available, it was obtainable at 4¼ to 4½ cents. The remaining grades were freely offered at 3¾ cents.

It is believed that the natural gasolines have reached the level where some of the larger manufacturers will start storing part of their output. Those who have made a survey of the situation state that stocks of natural gasoline are exceptionally low for this season of the year. The storage programs which have been made effective from time to time largely account for the more stable market which has been effective over the past year. The major buyers of this product often make substantial reductions in their purchases for brief periods. In the past this resulted in overnight declines in prices so that the ups and downs of the market were much more pronounced than in the case of refinery declines. The enlarged storage facilities are largely responsible for remedying this situation. This storage has served as a buffer in maintaining an equilibrium between the extremes in supply and demand, resulting in more uniform prices, a development which has been appreciated by both buyers and sellers.

Despite the steady declines of the past few weeks, the natural gasoline manufacturers believe that a favorable price structure in relation to the refinery can be continued over the coming year. So far as the Mid-Continent is concerned there are no disturbing factors in prospect from the producing end. Proration programs in the flush fields, such as Oklahoma City, apparently assure a continuance of the situation of the past year in which the newer sources of supply are being held back, due to the fact that there is no outlet for the crude oil.

Some concern has been expressed as to greater supplies of natural gasoline from California which compete directly with Mid-Continent output in export and coastwise movements. The Kettleman Hills development has brought a production of approximately 500,000 gallons daily and this has more than absorbed any decline in the older fields. However, proration plans have either been completed or are in prospect for the flush fields of California and if carried out, should prevent any serious overproduction of natural gasoline in the West Coast States.

Refinery Situation

The serious situation existing in the Mid-Continent refinery gasoline market is reflected in the efforts being made to extend the marketing territory. A trip just completed by the writer to representative refining points in the Rocky Mountain States and California brought numerous complaints from sales heads regarding the invasion of Mid-Continent gasoline in that area. Oklahoma gasoline for several weeks has been sold in eastern Washington, Idaho, and all of the Rocky Mountain States. One case is cited in eastern Washington where the freight rate from the Oklahoma refinery which furnished the gasoline was 6.6 cents per gallon. The net back to the refiner was 4.25 cents per gallon.

This extension in marketing territory was brought to the door of the southern California refiners 10 days ago when several cars of Mid-Continent refinery gasoline were delivered in Los Angeles. Refiners in the West Coast State have had plenty of troubles of their own all year in maintaining a gasoline market with the constant threat of overproduction, and this additional competition from the Mid-Continent has not been welcomed.

In the opinion of one large California refiner it will prove to be the last straw which will break the back of the California gasoline and crude oil market, resulting in a general lowering of prices which will place West Coast and Mid-Continent operations on a more equal basis than now exists. Should this develop it is probable that Oklahoma refiners and those in adjoining areas, particularly North Texas and the Texas Panhandle will find it impossible to absorb the large freight rates to these distant consuming points and complete with the prices which will be quoted from Rocky Mountain and California refiners.

There were no developments during

(Continued on Page 155)

REFINED MARKET BAROMETER

The few price changes of the past week in refined markets generally reflected a continuance of the weakness which has been characteristic of most products for several weeks. The greatest weakness in gasolines centered in the West Coast states, where it was predicted that prices would be generally reduced in order to meet competitive conditions. In several sections bad weather conditions reduced gasoline consumption to a minimum and this was reflected in the demand at refineries serving those areas. There has been a seasonal increase in kerosene consumption but refinery supplies are adequate and prices are unchanged. Several refining groups reported a more active demand for furnace oils, but this increase is yet to have any significance in refinery prices. Natural gasoline prices again declined in the Mid-Continent and the market in California is also weak. There were no important changes in heavy fuel oil prices, although competition for business is keen at coastal points. In the lubricating oil list, bright stocks and steam refined stocks continue weak.

Mid-Continent—Natural gasoline prices lower. Refinery gasolines weak. No change in kerosene. Fair demand for low cold test grades of fuel oil, gas oil and furnace oils. High cold test grades weak. Bright stock prices lower.

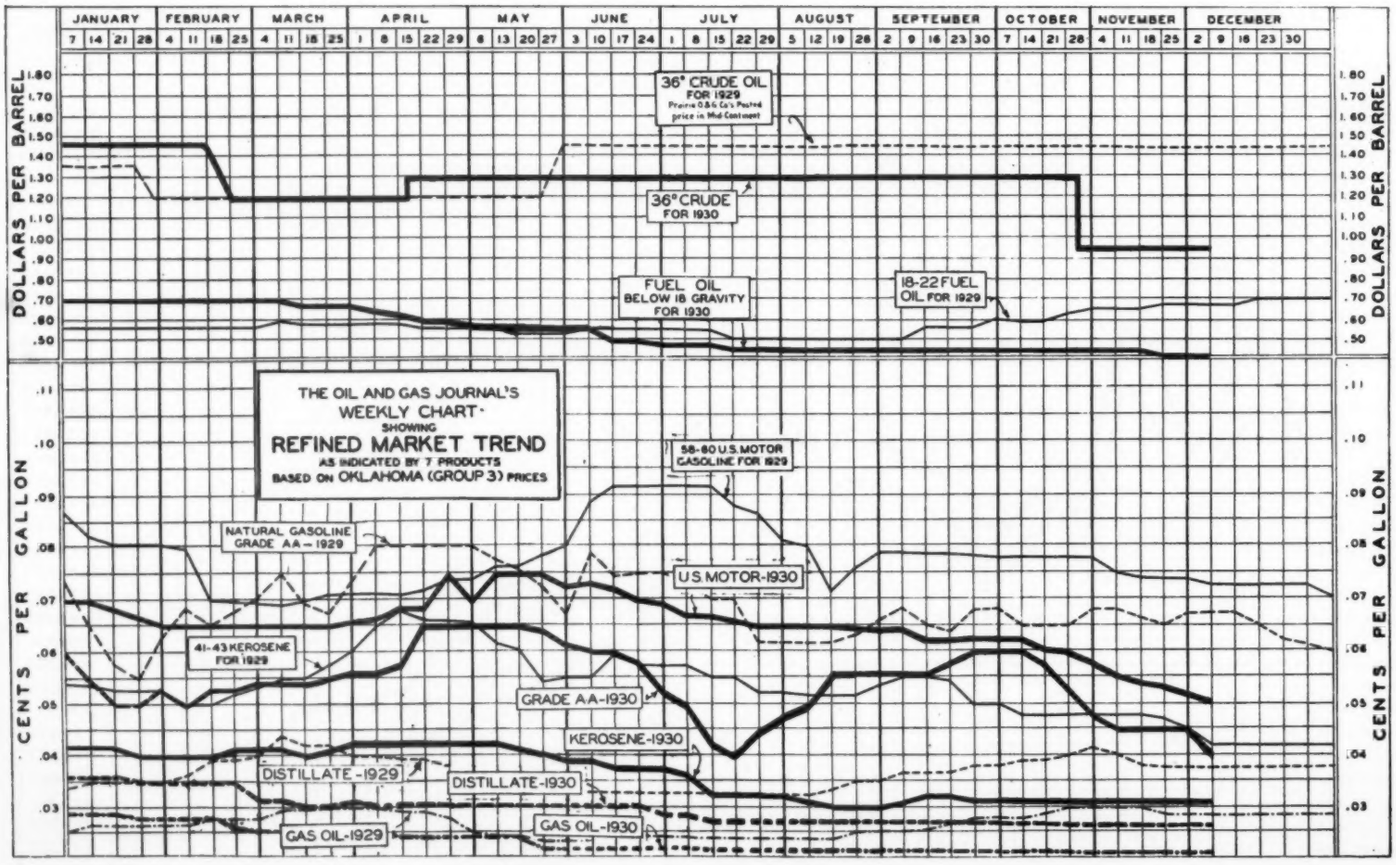
East Coast—Market generally slow. Seasonal decline in gasoline demand. Better movement of kerosene and prices unchanged. Lower prices for Bunker C fuel oil in prospect. Fair demand for gas oil. Cylinder oils weak.

Pennsylvania—Little change in market except lower prices on steam refined stocks and bright stocks. Gasoline and kerosene demand slow.

Chicago—Cold weather aids furnace oil demand and slows up gasoline. Gasoline movement largely confined to contracts. Zero grades of fuel oil and furnace oil strong. Lubricants weak.

Gulf Coast—Prices unchanged. Gasoline weak.

California—Gasoline market, including natural gasolines, in critical position and reductions believed assured. Fuel oil also weak, especially for domestic movement.



Dutch-Shell Proposes Higher Prices

Anxiety Over Condition of Small American Producer and Effect on Conservation Movement Given as Main Reason

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Dec. 1.—Fearing that present conditions in the American petroleum industry may cause the abandonment of the industry's curtailment program, Royal Dutch-Shell is prepared to better market conditions for independent producers here by raising crude oil prices, conditional on similar action by their competitors in this country, according to a cable to the New York Times from London today. The Times' report follows:

The leaders of the vast Royal Dutch-Shell oil interests are prepared to raise the price of crude oil in the United States on the condition that their competitors among the oil purchasing companies do likewise.

In the belief that the incessant weakness of crude oil prices is aggravating the depression throughout the American oil industries, the Royal Dutch executives have put out informal feelers during the past month in the hope of joint price raising by all large oil purchasers, including their great rivals, the Standard Oil groups. So far they have met with no encouragement from the American oil leaders, who are determined that prices must seek their own levels.

Sir Henri W. A. Deterding, head of the Royal Dutch group, scents danger in the plight of small American producers who continue to receive less and less for their oil, despite a voluntary reduction of 16 per cent in their output in the interests of conservation. He sees the confidence of the entire oil industry shaken by the growing numbers of ruined oil producers in Oklahoma, Texas and California, whose only reward for restricting their output has been a 36 per cent fall in prices since the beginning of the year. The Royal Dutch leaders fear, in fact, that the small producers may become desperate in the face of failing prices and turn their backs on restriction altogether. To ward off that danger and to give stimulus to the entire industry they have approached their chief American rivals, but so far without success.

Could Stimulate Business

Much more than the existence of the small producers depends on an upward turn in prices, in the opinion of Royal Dutch executives here. They are convinced that great oil purchasing companies, like themselves, have the power to start the whole industry on the upgrade once more and thus to make the first move in ending general trade depression. The Royal Dutch-Shell companies are vastly larger purchasers than producers in the American oil market.

"Every one is playing the restriction game with remarkable loyalty, except the Russians," one of Sir Henri's chief lieutenants here told your correspondent yesterday. "Everyone has been making sacrifices in an effort to reduce stocks and to meet the pressing problems of oversupply. Just remember that American production last week was the lowest for four years, and you will see what co-operation among the producers can do.

"But what is the reward the producer gets for his loyalty? Prices go down, down, down. The normal effect of restriction is, of course, to raise prices, but the American producer tries restriction and sees his prices continue to slide. Would it be strange if he decided, 'I am getting less for my oil when I restrict than when I did not. I am going to end this restriction, which is bringing me to the edge of ruin. Prices may go still lower if I increase my output, but at least there is a chance that my aggregate return will be greater.'

"That is the dangerous reasoning which we think is going on in the minds of small producers in the United States today. The situation is dangerous and it is up to the big purchasing companies to avert the danger."

American oil purchasers, when approached by the Royal Dutch, took the opposite view, it is understood here. They regarded Sir Henri's price raising proposal as "a nip of whisky" for the patient, when what he needs is a strong purgative. They shared the Royal Dutch leader's anxiety, but believed that price raising would be a mere temporary stimulant which might lead to a still more disastrous relapse later. Sir Henri's proposal, they feel, would merely prolong the agony, whereas their own attitude is to take their medicine, no matter how sharp the agony, by letting prices fall to their natural level.

As for the possible danger of the restriction policy, American oil men believe it would be just as great with higher prices and the chance of higher rewards.

Reports of an imminent "oil war" were denied by your correspondent's informant, who is a director of the Royal Dutch and affiliated companies. Peace prevails along the entire oil front, except in Rumania, he asserted, although he deprecated the use of military terms to describe oil rivalries.

"The public has such a medieval conception of our business," he said. "We are pictured as lustful barons with our pockets overflowing with gold and our fingers clutching at still more from the poor consumer. The public does not realize that oil wars are just as disastrous to us as real wars are to nations. Any oil war always is disagreeable business for all of us.

"The oil industry is international, however, and any crisis in any part of the world has the same effect as a crisis in the Balkans has on international politics. In fact, the only danger spot in the oil world today is Rumania, where the Rumanian company, Asta Romana, has just abandoned restriction over the protests of its competitors, who include ourselves, the Standard and a French group, and, although Rumania is relatively small on the world's oil map, any disturbance of restriction there is bound to be felt elsewhere."

The Royal Dutch executives are not worried by the Soviet government's boasts of Russia's huge oil production. Russian oil wells, they are convinced, are flowing without restriction of any kind and could be outdistanced in a minute if American and European wells were operated on the same "flagrantly wasteful" basis.

Although the Russians are blamed for dumping oil into small countries like Switzerland, no instance has come to the attention of the Royal Dutch company of Russia's dumping oil into the British market. The Russians are bound by a price agreement which they have not violated, according to oil men here, because they need British credits too badly.

Cut Looms in the California Market

Situation Complex and Becoming More Difficult Every Day. Appellate Decision on Gas Law Not Conclusive

By L. P. Stockman

LOS ANGELES, Calif., Dec. 1.—The oil industry in California is confronted with a new crisis and the situation has reached such a state that anything may happen. Outwardly, everything appears encouraging, but those in close touch with existing conditions are distinctly pessimistic. The situation is a rather complex one and becoming more difficult from day to day. Recent developments tend to indicate the probability of a downward revision in crude and refined oil prices in the not far distant future. Just as a chain is no stronger than its weakest link, the degree of stabilization effected in a given area is not any greater than the amount of co-operative effort expended. One by one, large California operators are withdrawing their support, due both to financial difficulties and their unwillingness to bear the burden. One large company ostensibly in sympathy with curtailment and stabilization has even gone so far as to supply gasoline to jobbers for resale at prices substantially below prevailing retail quotations. The Standard, Union, and one or two other large companies are the only ones which have a clean slate at the present time but it is not logical to assume that this group will attempt to stabilize conditions indefinitely unless help is received from other interested companies.

It is impossible to say just how soon crude and refined oil prices will be reduced as every attempt will be made to prevent demoralization of the price structure as long as possible. The handwriting on the wall, however, indicates the probability of a drastic cut in no unmistakable terms. It may be several weeks before definite action is taken as a final effort will be made to effect an additional curtailment in state production as a last resort. This final attempt to forestall a complete collapse is based on the theory that there is still a chance to partially stabilize conditions if Playa Del Rey can be brought into the existing curtailment program. Crude oil from this field is no doubt exerting a depressing effect on refined oil prices but at the same time it must be recognized that very few refiners are operating on Playa Del Rey crude exclusively. It is the present practice of refiners to run about 2 bbls. of sweet crude for each barrel of Playa Del Rey oil because the latter has a relatively high sulphur content.

Another Flush Year

It is problematical whether local conditions can be stabilized for any length of time by effecting an additional curtailment because any reduction made in state production at present would only afford temporary relief. This is particularly true as 1931 looks like another big year from a production standpoint. In addition to this, operators sponsoring stabilization will be obliged to absorb a greater proportion of production due to the Richfield Oil Co.'s new policy of supplanting purchased production with crude oil from its own wells. This will make it necessary for other major companies to step in and buy this oil, approximately 20,000 bbls. per day, or face the prospect of keener competition. This is of special importance because those companies carrying the burden will be obliged to construct additional storage facilities if any great amount of crude or refined oil is added to stocks.

The present crisis confronting California operators has not developed over night but is rather cumulative in effect. There have been several important contributing factors, the most important of which is perhaps the relatively small spread between the prices of crude and refined oil. Economically, crude oil is not worth any more than its value from a refining standpoint and the price paid for raw material should be commensurate with the returns received from refined products. During the past several months crude oil price schedules have been all out of line in comparison with the prices of gasoline.

Refined Market Weak

Major companies justify the present price schedules for crude oil on the assumption that producers of crude oil should be recompensed for effecting statewide curtailment. This position is entirely justified but at the same time refiners are being penalized because of the unusually small spread between crude and refined oil prices. The refined oil market on the Pacific Coast has shown considerable weakness during the past few weeks and is expected to get more acute during the winter months. In the Pacific Northwest, particularly in the area adjacent to Spokane, California refiners have been obliged to grant temporary reductions to resellers in order to meet outside competition. A similar unfavorable situation exists up through the San Joaquin Valley and in the San Francisco Bay region where Kettleman gasoline is being sold below standardized quotations. In Southern California territory bootleggers have made big inroads into the gallonage of both major companies and legitimate independent refiners.

The drastic price reductions along the Atlantic Seaboard have also complicated the local situation as practically every gallon of gasoline shipped to the East Coast is at a loss. Under present conditions California is to all intents and purposes isolated as far as intercoastal shipments are concerned. Based on a net back of 7 cents per gallon at California refineries, operators are losing at least 5 cents per barrel on most all grades of crude oil purchased at present prices. It seems logical to assume that a readjustment can be anticipated in the price of crude and refined oil sooner or later. This downward revision might be held off until after the first of the year because of excessive inventories. This anticipated price cut will in no way interfere with curtailment work as it will be necessary for producers to keep production down to a minimum if they desire to maintain any semblance of a price structure.

Court Decision Analyzed

Contrary to prevailing opinion the decision of Division No 2, District Court of Appeal, rendered Saturday, November 29, did not determine the constitutionality of the California gas conservation law. This decision, according to Charles Son, independent oil operator, and a member of the California bar, omitted all major issues, especially that portion of the appeal which referred to the authority of the legislature to restrict the production of oil. In this connection the Appellate Court says:

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Many Ways to Stop Tank Truck Losses

Nation-wide Survey Reveals Idle Time, Unprofitable Loads and Failure to Get Maximum Amount of Work Among Causes of Waste

By Thomas F. Smiley

Revolutionary changes in methods of transporting gasoline and other petroleum products have brought with them new problems and new opportunity for economies. Developments of the last year indicate that the tank truck, already playing a major part as a carrier in this branch of the oil industry, is to be assigned a still more important place. Movement of gasoline by pipe line from the refinery to centers of consumption involves the use of tank trucks to convey it from strategic points along the line to filling stations in the district. Economical and efficient truck operation thus becomes a matter of greater concern.

Surveys for projected gasoline pipe lines from the Mid-Continent territory, as was told in The Oil and Gas Journal of June 5, 1930, indicate that the routes which offer the greatest advantages follow as closely as possible main automobile highways. One survey revealed that a main automobile highway running from Oklahoma to northern and eastern cities was intersected by other such roads at intervals of 50 to 100 miles. Plans are under way for the construction of a gasoline pipe line along this main highway and to establish bulk stations at selected intersections.

Trade for a gasoline pipe line, it was estimated, would be drawn from an area extending 50 miles from the pipe line on each side. That is to say, the line would feed a strip 100 miles wide from the refinery to the other end of the line. It was calculated, moreover, that the automobiles registered in the towns and other communities traversed would consume five times as much gasoline as the pipe line could carry. Bulk stations installed at 100-mile intervals along the line would each serve a region extending roughly 50 miles in all directions.

Tank Trucks to Cover Trade Radius

Tank trucks, according to plans formulated, will travel between the bulk stations and customer filling stations within the trade radius. Thus it is apparent that greatly expanded use of the tank truck in the delivery of gasoline adds enormously to the importance of adopting the best possible practice in the operation of these trucks.

In this connection a nationwide survey made by the General Motors Truck Co. with a view of ascertaining the most economical methods of using trucks in the distribution of oils and gasolines is of extreme interest. The company's findings, which constitute an impartial, factual analysis, are presented in a carefully summarized report.

Economical delivery of petroleum products from bulk stations to retailers is perhaps the most important problem in the entire business setup of the distributor of petroleum products, says the report. Whether he is an independent wholesaler, a distributor operating on a commission basis or a bulk station executive in charge of local wholesale operations for a refiner, the largest individual cost of his wholesale operation is the cost of delivery. Moreover, the effectiveness of his delivery service is an important factor in maintaining a satisfactory volume of sales.

Delivery, therefore, has a vital, twofold bearing on profits. And of all the functions of the distributor of petroleum products, no other single feature of his operation is so closely tied up with the ability to produce satisfactory earnings.

Some Not Alert to Situation

Careful study of the delivery operations of many distributors during the survey on which this report is based indicates clearly that not all distributors are alert to the real importance of carefully planned and managed delivery. For example, some distributors were found whose average delivery cost per gallon of gasoline—based on thoroughly reliable cost figures—was as low as four-tenths of 1 per cent. Other operators were found, however, whose cost per gallon, on the basis of equally accurate and complete figures, was as high as 1¼ cents a gallon.

To be sure, the conditions under which each distributor operates—the type of roads encountered, the contour of the country, the concentration of his trading area, and so on— will affect the cost of his truck operation and, hence, of his delivery. But even when proper allowance is made for these unavoidable differences, the fact remains that some distributors are able to deliver at lower cost and at a greater profit to themselves.

An analysis of expenses and profits of five distributors of gasoline whose delivery costs were between .004 and .006 cent a gallon, shows this average breakdown of margin: Delivery cost, 17 per cent; all other expenses, 74 per cent; profit, 9 per cent. A similar analysis of five distributors whose delivery cost were between .008 and .012 cents, shows these averages: Delivery cost, 31 per cent; all other expenses, 67.2 per cent; profit, 1.8 per cent. The distributor's profit, under average conditions, is likely to vary in reverse ratio to his delivery costs.

But the relation of delivery cost to profits is not the only significant fact in respect to delivery. The major purpose of the company-owned bulk station or the independent distributorship is to expedite the movement of refined products to retailers. The bulk station itself, no mat-

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Texas Deep Wells Successfully Tubed

Two of the Seven 8,000-Foot Wells in Big Lake Field, Reagan County, Texas, Now Producing Through Strings of Tubing

By L. G. E. Bignell
Petroleum Engineering Editor

Considerable interest has been manifest in the work of tubing the 8,000-foot depth wells in the Big Lake Pool, Reagan County, Texas. Two of the wells are now completed and producing through the tubing. The contract for running these strings of tubing was let to The Southern States Co., Inc., Shreveport, La., operating under the patents and process of H. C. Otis, by each of the operating companies. The first well to be tubed was C-2 of the Big Lake Oil Co. upon which work started November 15, and the job was completed November 21 at 11 a.m. The well has a total depth of 8,603 feet and is cased to 7,950 feet with a string of 5 3/16-inch 20-pound casing. This string is cemented in place and the well is in good condition for tubing.

The Southern States Co. tubing crew moved in on the well a few days prior to November 15 to rig up and its first work was lubricating in about 62 feet of perforated pipe that makes up the bottom of the tubing string. The perforations in these two joints are three-eighths-inch drilled holes and to get them in the well under the flowing pressures required that a 60-foot lubricator be rigged up over the hole. This lubricator with the connections already on the top of the well permitted the two joints of perforated tubing to be made up and run without difficulty.

Immediately above the upper end of the perforated pipe there was inserted a cast iron plug that was held to its seat at the bottom of the 3-inch tubing by the pressure exerted by the flowing stream of oil and gas from the well. As other joints of tubing were added the weight of the string increased until it was great enough to allow the tubing to be lowered against the upflow of oil and gas.

Methods Employed

Two control heads were used at the top of the well to facilitate running this long string of 3-inch plain tubing, which measured when in place 8,465 feet. It does not set on bottom but is suspended in the hole. The control heads and rigging at the well are shown in the accompanying cut, this layout following the general practice of The Southern States Co.

After the full string of tubing had been lowered into the well it was necessary to remove the cast iron plug between the perforated and regular tubing.

To do this water was run into the 3-inch tubing and when it was partly filled valves were opened between the casinghead and the top of this string of tubing so that the well pressure was directed into the tubing on top of the column of water. When the hydrostatic head, plus the pressure built up by the flow of gas from casinghead into the tubing, was great enough the plug at the bottom of the well was forced down inside of the perforated string where it remained and the well was then ready to produce through the tubing.

As soon as the pressure recorded on the gauge at the tubing head began to fall it was known that the cast iron plug in the bottom of the string was below its seat and a little experimenting was done in building up sufficient pressure within the tubing to make certain that this plug was forced below the perforations in the two bottom joints.

Before this well was tubed it made approximately 2,500 bbls. of oil per day with from 24,000,000 to 30,000,000 cubic feet of gas, but as the tubing was lowered both the oil and gas flow was reduced

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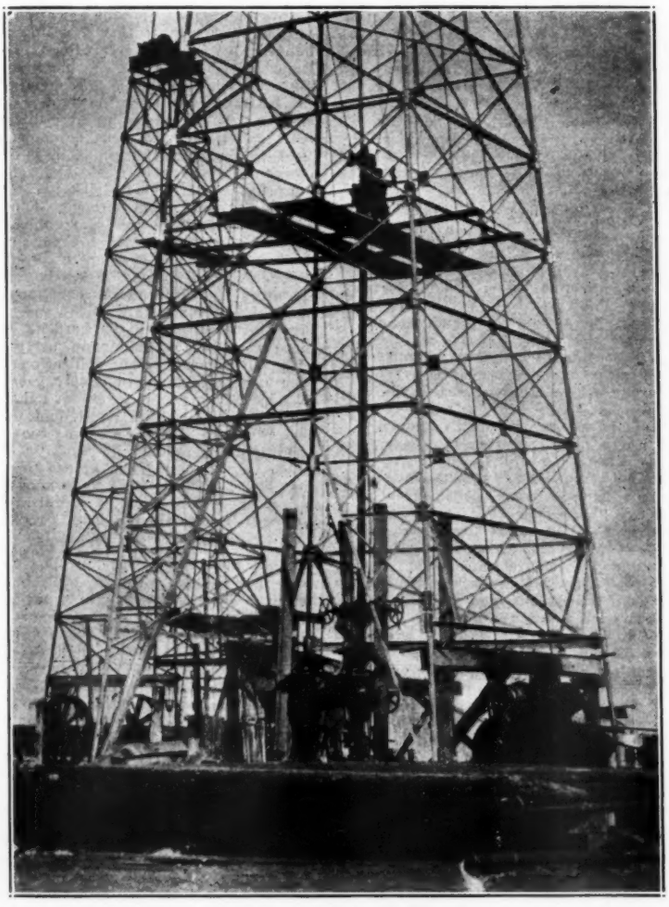


Lubricator used in running joint of 3-inch perforated tubing in No. B-3 well, Continental Oil Co., Big Lake Field, Texas.

Tubing Improves Producing Conditions

Deep Wells in the Oklahoma City Field Are Being Tubed to Reduce Water and Cut Gas-Oil Ratio With Good Results

By L. G. E. Bignell
Petroleum Engineering Editor

It was two years ago today, or December 4, 1928, when the Indian Territory Illuminating Oil Co. drilled in its No. 1 fee, Oklahoma City well, that marked the beginning of a very active campaign of development in the area just south of Oklahoma City, Okla., which up to date has resulted in the completion of about 670 wells, with about 100 more drilling and new locations.

With this deep drilling to lime and sand production zones more than 6,000 feet below the surface there were developed many new engineering problems that have taxed the resources of the production and petroleum engineers and have caused much speculation as to methods of handling this type of production.

When the field was young there was great thought given to methods to be applied to produce these deep wells when the natural flowing pressures were lowered below that required to lift this oil and water to the surface without mechanical aid. Many ideas were suggested and, viewed in the light of past experiences in the Mid-Continent areas, this field seemed to present some rather unusual problems.

However, it has been found that as it became necessary to supply mechanical energy in some form to bring the oil to the surface, the older methods could be readily applied to 6,000-foot wells and they are now being produced by gas lift and swabbing, and as occasion arises it is possible some of them will be produced by pumping.

In the limestone area where the wells are making a large amount of water and the fluid level in the holes is high the gas lift has not required much material change from the practice of the older Seminole area. In fact, engineers who have worked in both fields do not seem to consider Oklahoma City Pool will offer any unusual problems even when the fluid level is very low in the wells and the natural flowing pressures reduced to the minimum required to move the oil into the bottom of the holes.

Wells Being Tubed

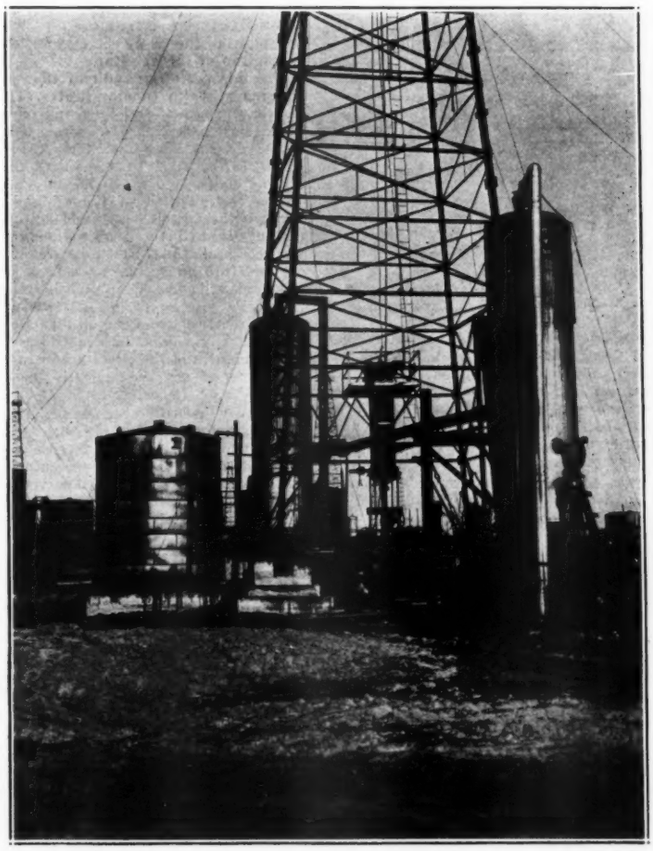
As the percentage of water increased in the limestone wells it was found advantageous to tube them. By so doing the percentage of water to oil was reduced and in some instances where the wells had actually ceased to produce oil the running of tubing restored them as oil wells and brought the production up from nothing to as much as 350 bbls. of oil per day, with about 10 bbls. of water produced for each barrel of oil.

There are about 60 wells in the Oklahoma City Pool now finished with strings of tubing and these flow strings vary in length from 2,500 to over 6,000 feet and in size from 2½-inch diameter to 4-inch diameter, with some strings of the tapered type that range from 2½ to 4-inch sizes.

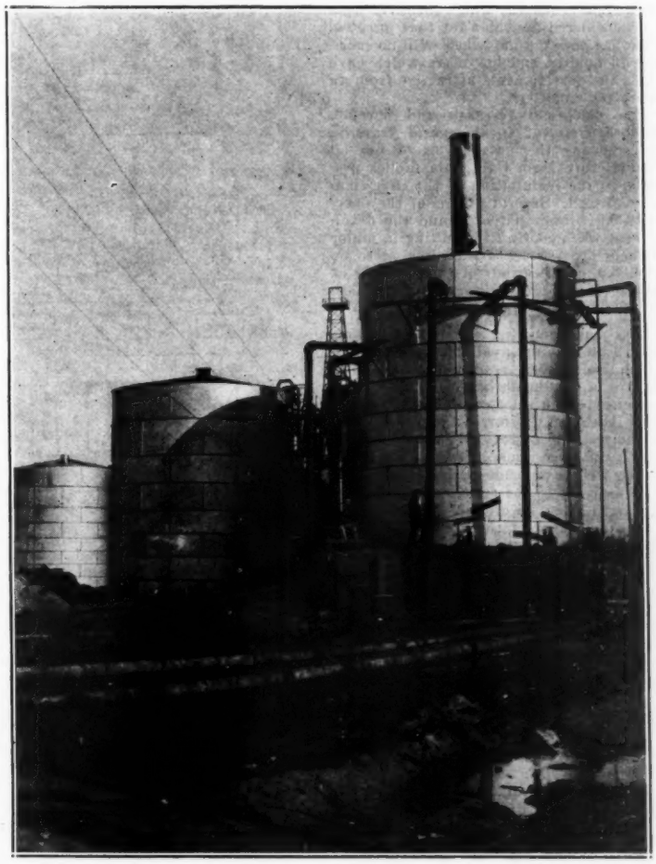
As the wells must be tubed against pressure in many instances the Southern States Co., of Shreveport, La.,[1] has been quite busy in this field and has several weeks work ahead at this time with many more wells to be handled as rapidly as it can get to them.

It is common practice to use external upset tubing for these wells, and it is now becoming general usage to place bottom hole chokes on the lower ends of these strings of tubing. The Otis type patented bottom hole choke is finding favor with many companies, although there are a few chokes being made in field machine shops involving other ideas.

Tubing wells has shown in every instance a reduction in the gas oil ratio as the production enters the traps at the surface. This reduction has been as high as 1,000 feet per barrel in some instances and specific cases were cited where the gas had been cut from 2,000 to 1,400 feet per barrel after the well was tubed and provided with either bean at the top of the hole or bottom hole choke.



Hall and Briscoe's No. 1 Muller well, in the NW, Section 2-11-3w, Oklahoma City Pool, showing cushion-head and oil-gas separators in one of the new types of hook-ups devised to handle wells making large quantities of sand.



Flow tank designed for handling oil, gas and sand from the Phillips Petroleum Co.'s No. 1 Lybrand well, in the NW, Section 2-11n-3w, Oklahoma City Pool. Production first passes through oil-gas separators at the well.

Reda Submergible Pump Tried

During the early part of October the Corporation Commission for the State of Oklahoma sanctioned the test of the Reda submergible centrifugal pump[2] in one of the Indian Territory Illuminating Oil Co. wells to determine its possibilities and it was installed on October 30 in the No. 1 George Button well where it is still in operation.

This well had been produced by gas lift with 2,276 feet of 2½-inch tubing in the hole and under that method had made about 100 bbls. of oil with approximately 3,200 bbls. of water daily. The well had not been produced for a period of about 30 days prior to October 30 when the Reda pump was installed.

The centrifugal pump was set in the well at approximately 2,465 feet below the surface of the ground, and about 400 feet below the surface of the oil, which occupied the upper 800 feet of the fluid column in the hole.

This pump has made an average production for 19 days in November of 78¾ bbls. of oil and 1,522 bbls. of water per 24 hours. This is at the rate of about 19½ bbls. of water for each barrel of oil, whereas with the gas lift the water-oil ratio was about 32 bbls. of water to 1 bbl. of oil.

A back pressure of about 20 pounds per square inch was held on the casing during this pumping period, with pressures varying from 120 to 260 pounds per square inch on the tubing. It was found that the well would pump off if the tubing back pressure was reduced to about 95 pounds per square inch.

The well is making about 65,000 feet of gas per day of which 48,900 feet flows through the tubing and 16,100 feet through the bradenhead or between tub-

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[1] "Method of Tubing High Pressure Wells," by H. C. Otis, The Oil and Gas Journal, October 3, 1929, page 169.

[2] "Submergible Electric Oil Well Pump," by L. G. E. Bignell, The Oil and Gas Journal, January 9, 1930, page 36.

Lubricants From California Crudes

Richfield Company Manufactures Complete Line From Elk Hills Production. Steam Refined Asphalt Also Obtained in Operation

By C. O. Willson

The Richfield Oil Co., one of the major refining and marketing organizations of the West Coast with large distributing facilities in several eastern states, for some time has been manufacturing a wide range of quality lubricating oils from California crude oils. The finished oils from the California crudes constitute one line of lubricants made available to customers by the Richfield refineries which manufacture other grades including Pennsylvania crude oil products refined at an eastern plant controlled by the company.

The lubricating oil plant located at Watson, Calif., refinery attests to the progress made in refinery processing which has enabled operators to secure lubricants for motor vehicles and industries from crude oils which formerly were not considered desirable for that purpose. This has been accomplished with no sacrifice in quality and low costs which have made the developments attractive from an operating angle.

The Richfield research and development department spent several years in investigating the possibilities of lub oil manufacture from California crudes previous to the installation of the first commercial unit. Several phases of the operation have been patented and the development work continues resulting in minor changes from time to time having to do with the specifications of the products or improvements in manufacturing methods.

Elk Hills Crude

The manufacturing department is fortunate in having available a crude oil which lends itself readily to the manufacture of napthenic base oils. The crude is secured from selected wells in the Elk Hills Field of California. The crude oil at the wells is segregated in order to secure a wax free grade. Tests of the crude at the wells are made periodically. This oil is brought to the refinery by pipe line and segregated in storage at the plant. As a final check of the crude oil, a complete laboratory test is made of the stored oil previous to a run at the plant.

The wax free Elk Hills crude oil as commonly used at the plant has the following characteristics based on laboratory tests:

Gravity—20 A.P.I.

Naphtha—10 per cent, initial 200° F., endpoint 437° F.

Gas oil—40 per cent, gravity 34, initial 400° F., endpoint 650° F.

Lubricating distillate—29 per cent, gravity 18.5, 600 Saybolt Universal viscosity at 100° F., zero pourpoint.

Remainder—Steam refined asphalt and road oil.

This crude oil is first topped in a tube still, special care being taken in this distillation as one of the important phases of the entire operation. With the gasoline, kerosene distillate and gas oil fractions removed, the residuum, which is the raw material of the lubricating oil plant, has a 14° A.P.I. gravity and a Furol viscosity of 150.

Method of Operation

The accompanying Chart 1 shows the essential features of the lubricating oil plant as now operated at the Richfield refinery. The 14° gravity residuum is circulated (Figure 1) in a tubular heater and a 12'6"x31'6" shell still.

The overhead vapors pass to a tower on which a vacuum is maintained to aid in the distillation and fractionation of the products. A gas oil cut is taken overhead at the top of the tower through a dephlegmator control. This product has a 23-24 gravity and is rerun to secure a light neutral oil of 100 viscosity at 100° F. This product has an amber color and is an excellent semi-Diesel fuel. It can also be used as a cracking stock.

The second stream which is taken from the side of the tower is the lubricating oil distillate which contains all the desirable lubricants obtainable as overhead products from the crude oil. This oil is taken through a cooler to storage.

As shown in the chart the heavy ends condensed in the towers which contain practically all the asphaltic material are removed from the tower and drop back into the shell still.

The third product of this phase of the operation is a steam refined asphalt. The Richfield company has developed a large market, particularly in California for asphalts and road oils. This steam refined asphalt as taken from the shell vacuum still, usually has a penetration of from 40 to 50. By sacrificing yields a higher penetration product is secured. The ability to secure this steam refined asphalt contributes materially to the profitable operation of the lubricating oil plant.

Great stress is laid upon this vacuum distillation and fractionation of the residuum oil. The proper correlation of the two is directly related to the results obtained in the treating and redistillation from which the finished products are obtained. Considerable steam is used in distillation and a sharp separation of the asphaltic and lubricating oil materials is obtained. The battery is operated on a continuous basis.

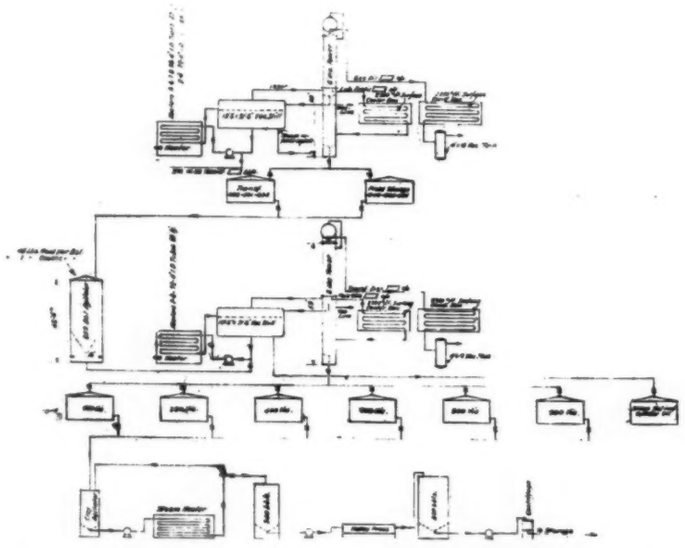


Chart 1—Flow chart showing main features of plant for manufacturing lubricants at Watson, Calif., refinery of the Richfield Oil Co.

Acid Treatment

The lubricating oil distillate from storage is treated in a 850-bbl. agitator. The acid treatment consists of a 5-pound per barrel and two 20-pounds per barrel treatments. A slight water wash to collect the pepper acid follows the acid treatments and then the oil is given a caustic wash equivalent to 1 to 1½ pounds per barrel.

The treated oil is then circulated through a tubular still and a 12'6"x31'6" vacuum shell still (Figure 2). The vapors pass to a vacuum tower for fractionation and the residuum is removed as cylinder stock. The latter is utilized in the manufacture of greases and other products. When used for steam refined cylinder oil, for which the company has developed a substantial market, it is given a clay treatment. This product passes all the specifications for cylinder oil, including a green color which is stable.

The overhead product from the rerun tower is a distillate suitable for transformer oil. Recently it has been determined that this cut is a highly satisfactory fuel for Packard Diesel engines used in airplanes.

The other product of the towers are the neutral oils. A complete line of pale and red neutrals ranging from 100 to 1,200 viscosity are manufactured. The bulk of the output ranges from 400 to 600 viscosity.

As final steps in the manufacturing operation all the neutral oils are given a clay treatment and centrifuged. A flower-like clay obtained from bentonite deposits in Death Valley, California, owned by the Richfield company is used for the clay treatment. The clay and oil which has been preheated are mixed in an agitator. A thorough mixture is obtained by agitating the oil as the clay is dumped at the top of the agitator.

The mixture of oil and clay then passes through a steam tubular heater. This is for the purpose of expelling any moisture in the clay and aiding the contact between the clay and the oil. A temperature of from 275° to 300° F. is required for the oil and clay mixture.

The recirculation of the oil and clay through the steam heater and agitator is continued until the required contact is secured and then the mixture is discharged into an accumulator tank. From this tank it is picked up and delivered to the Kelly presses (Figure 3) where the clay is removed from the oil. This operation has been adapted to meet the needs of the plant and the presses have a large capacity and are economically operated.

Centrifuging

Before going to storage tanks, the oils are finally centrifuged (Figure 4). The quantity of moisture and foreign matter removed in this operation percentagely is small. The management, however, feels that it gives the final assurance as to the quality of the finished products and con-

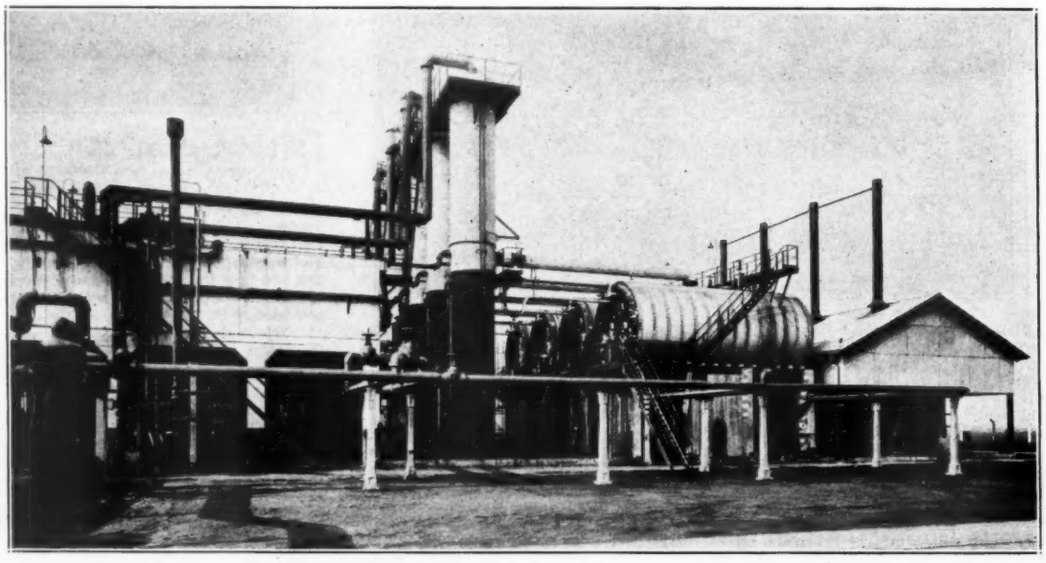


Figure 2—Battery of rerun stills for refining lubricating oil distillate.

tributes to the performance of the oils in motors and in industrial uses.

The method of operation which has been briefly outlined has given uniform products with an exceptionally straight viscosity curve between the operating temperatures of 100° and 210° F. The oils are stable in color with cold tests in the finished motor oils below zero.

These finished neutral oils are used exclusively in compounding "Westlube" trademarked motor oils (light, medium and heavy) which are one of the brands of motor oils sold by the Richfield marketing departments through its own stations and through dealers. They also are used in compounding various grades of industrial oils.

The manufacturing department of the Richfield company stresses the importance of laboratory control in the operation of the lubricating oil plant and all other phases of its refinery operation. In addition to the routine testing equipment, the company at the Watson refinery maintains a research and development department. The latter serves all the refineries of the Richfield company.

The facilities of this department include semicommercial equipment with which all new developments are worked out and which serve as a check on the regular plant operations. It was with this equipment that the several phases of the lubricating oil plant operation were perfected.

The laboratory control does not stop with the checking of the crude oil supply previously mentioned. It is necessary to make laboratory tests of all products secured at various phases of the operation. Although the latter has been standardized for a given grade of raw material, minor changes in operating are often necessary and the laboratory reports furnish the information on which these are made. The main features such as the method of distillation, fractionation, treating and centrifuging are sufficiently flexible so that variations can be made when necessary to assure uniform products in the final stage of operation.

ADDITIONAL VIEWS OF RICHFIELD LUBRICATING PLANT

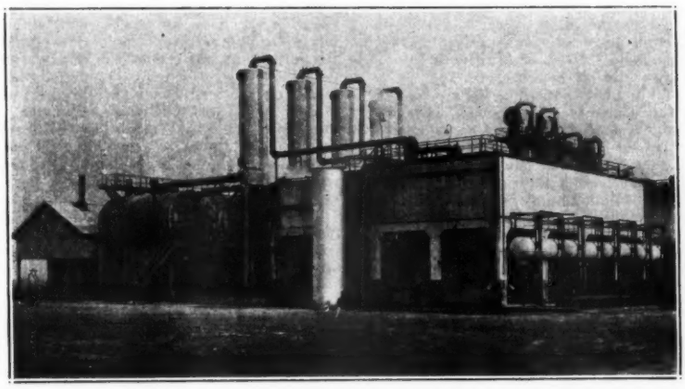


Figure 1—General view of vacuum stills for manufacture of lubricants.

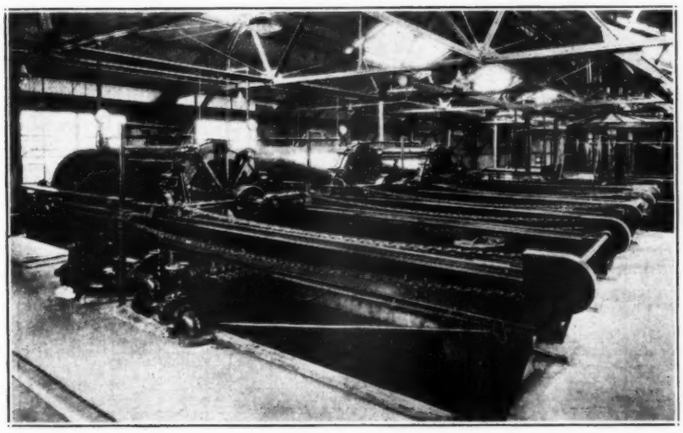


Figure 3—Presser for removal of clay from oils.

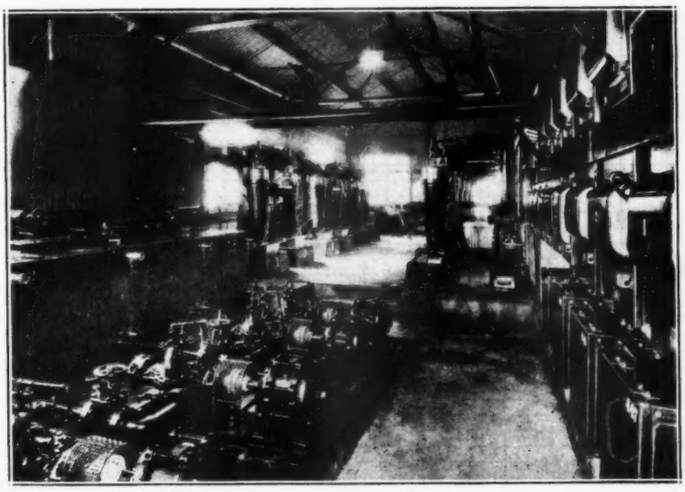


Figure 4—Interior view of centrifuge house, the final operating phase in the manufacture of the lubricating oils.

WORK FACTOR SUGGESTED AS BASIS FOR LUBRICATING OIL PURCHASES

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Dec. 2.—Discussion of the work factor test for the evaluation of lubricating oils was the outstanding feature of the meeting of the petroleum division of the American Society of Mechanical Engineers at its fifty-first annual meeting here today. The speakers pointed out that the usefulness of the standard laboratory tests in judging the quality of lubricating oils in the past has been limited, due to the difference in crudes from which lubricating oils are produced and to the various processes used in their refining. The work factor method proposed for evaluating lubricating oils, seeks to extend the application of the standard laboratory tests in that their results will indicate the service that will be obtained from the oils in actual operation. Increases in viscosity, neutralization number, precipitation number, and per cent of carbon residue of an oil when subjected to an endurance test, which stimulates service conditions as found in a forced-feed lubrication system, are expressed numerically by means of formulas, and the average of these results is called the work factor of the oil.

James G. O'Neill, chief chemist of the United States Naval Engineering Experiment Station at Annapolis and technical adviser on lubrication to the Bureau of Engineering, Navy Department, described the method and apparatus of the endurance test and the concordance of results obtained when different machines are used to test the same oil. Mr. O'Neill outlined in detail the work factors of turbine, Diesel engine, and aviation oils in relation to their performance in actual service and discussed the Navy method for purchase of lubricating oils employing the work factor.

"Lubricating oils for turbines, Diesel engines and aviation engines may show by the standard tests to have properties that are in accordance with oils that are known to be satisfactory, yet they may be very unsuitable," Mr. O'Neill said. "Specifications for lubricating oils embodying the standard tests are of value when they cover a narrow range of oils made from a crude and by processes of refinement which are known to yield satisfactory oils, but when such specifications are used for oils made from widely different crudes or by widely different methods of refinement, their value is very doubtful. Lubricating oils, when obtained from various refiners having different crudes or different process of refinement, must, in order to insure safe and economical operation of machinery, be subjected to some test which will give true information of their suitability and the quality of the service to be obtained from them; in other words, the test must tell whether or not an oil is satisfactory for use and also properly evaluate satisfactory oils, in order that the consumer may be able to decide what oils are the most economical to purchase.

The suitability and evaluation of lubricating oils are believed to be very well accomplished by means of the work-factor evaluation method. This method is the result of the accumulation of information over a long period of time of the behavior of oils in service and their behavior when subjected to an endurance test which simulates service conditions. In reality it is an accelerated service test for lubricating oils carried out in a rugged machine, equipped with a test journal, which operates at a fixed speed and bearing pressure continuously for 100 hours without means for heating or cooling the oil. It is not the purpose of the endurance test to replace the standard tests for lubricants, but rather to increase the usefulness of these tests in determining the suitability of lubricating oils and in evaluating them."

Mr. O'Neill described in detail the apparatus and method of conducting the work-factor test and in concluding said: "The object of lubrication is to substitute liquid friction for solid friction in operating machinery. To do this satisfactorily, it is necessary that the liquid possess low internal friction and be capable of long use with minimum change in its properties. The very nature of mineral oils in being resistant to chemical action makes them valuable for lubrication, but this resistance also makes it difficult to evolve satisfactory tests for their quality. The stability of an oil must then be recognized as of great value, but the stability must be determined in a manner which is in agreement with its application color not at too high temperatures or in highly concentrated oxygen atmosphere, but under pressures, temperatures, and in atmospheres which have some relation to service conditions. The results obtained from lubricating oil in service have been the governing factor from which the work-factor evaluation method has been evolved. The changes which take place in the oil in the endurance test and the actual service obtained from the oil are corelated and consequently form the basis for the work-factor valuation method."

C. M. Larson, supervising engineer for the Sinclair Refining Co., spoke on the evaluation of steam-turbine oil stability. Mr. Larson declared that the navy work-factor method, while sufficient in itself to indicate the rate of decomposition, loss through evaporation, and the corrosive tendencies in steam turbine oils, fails to measure definitely the resistance of emulsion. He declared that by taking into consideration the demulsibility at 130° F. of samples taken every 25 hours during the 100-hour navy work-factor run, the emulsion tendencies can be recorded as well, and declared that this demulsibility change is a real measure of the stability of steam-turbine oil.

Eustis H. Thompson, lubrication engineer for the Baltimore Copper Smelting and Rolling Co., spoke on crane lubrication. He described how the crane equipment of his company's plant had been responsible for costly delays in a period of increased production, examination showing that lubrication troubles were frequently to blame for these delays. Mr. Thompson described how these difficulties were overcome, maintenance costs were reduced, and lubricants and lubricating devices standardized, resulting in more efficient operation and substantial reductions in maintenance costs.

Albert Kingsbury, president of the Kingsbury Machine Works of Philadelphia, will speak before the meeting later in the week on problems in the theory of fluid-film lubrication, and will outline an experimental method of solution.

William F. Farish, consulting lubrication engineer, of New York, chairman of the lubricating engineering committee of the petroleum division of the American Society of Mechanical Engineers, presided at the meeting of the lubrication group today.

Railroads Seeking New Pipe Line Law

Want Common Carriers Subject to Same Restrictions on Transporting Commodities in Which They Are Interested as Railroads Are

Convinced that the railroads are confronted with their most serious emergency since the passage of the transportation act in 1920, the Association of Railway Executives, which represents every Class 1 railroad in the country, will demand sweeping legislative relief from Congress. The most radical provisions of the proposed legislation would compel the oil industry to divest itself of a $400,000,000 investment in oil pipe lines.

That the railroads were pushing these legislative aims was confirmed by Charles C. Paulding, vice president of the New York Central lines, who said to the New York Times:

"Competition of new and unregulated methods of transportation has brought about the present crisis in railroading. The railroads do not oppose the use and expansion of these methods. Such an attitude would be inimical to progress. What they do oppose, however, is operation by their new competitors free from the close regulation under which the railroads must carry on their business.

"In brief, what the railroads desire and will seek by appropriate legislation is the placing of all forms of interstate transportation under the jurisdiction of the Interstate Commerce Commission and the removal of certain restrictions on their operations that the railroads find onerous and believe unfair. The forms of transportation which the railroads will seek to put under the regulations of the commission are oil and gasoline pipe lines, motor vehicles and coastal steamship lines."

Mr. Paulding asserted that the movement of oil and gasoline in pipe lines by the oil companies has deprived the railroads of the revenue they would otherwise have derived from the carrying of these commodities.

"Under the commodities clause of the Interstate Commerce act," explained Mr. Paulding, "it is unlawful for any railroad to transport interstate any article or commodity, other than timber, in the production or manufacture of which it is directly or indirectly interested. The railroads now propose that pipe line companies be put under the same restriction and forbidden to transport any commodity in the production or manufacture of which they are directly or indirectly interested."

Bill Being Drafted

Mr. Paulding said that legislation proposed by the railroads would be embodied probably in about six bills and be introduced at the next full session of Congress.

Mr. Paulding said that, while drafting of the bills was not complete, they would embody one somewhat as follows:

To amend the transportation act so that pipe line common carriers shall be subject to the same restrictions as to the transportation of commodities in which they are interested, directly or indirectly, as the railways now are.

Oil Industry's View

The proposal of railroad executives that national legislation be enacted to compel oil companies to dispose of their holdings in pipe line companies would not materially benefit the railroads, it is said in the oil industry. It is pointed out that such legislation would hardly divert the shipment of crude oil or gasoline from pipe lines to railroads or stop the substitution of natural gas for coal. It is asserted also that the proposed law would result in a large loss of revenue to the oil companies, as the pipe line department is one of the most profitable branches.

Although crude oil has been transported almost entirely for many years through pipe lines to refineries and ocean terminals, the transportation of gasoline and natural gas through pipes for long distances is a comparatively new development that threatens to reduce the revenues the railroads have been receiving, the officials of the carriers assert. In the last year or two trunk pipe lines from the important gas-producing fields have been built to the thickly populated centers, with the result that natural gas has largely supplanted coal as a fuel in many localities. The movement of gasoline through pipe lines for long distances has not reached large proportions yet, although several gasoline trunk pipe lines are under construction.

Benefits the railroads would receive from the proposed national legislation was not clear to some executives in the oil industry. It is not believed likely that

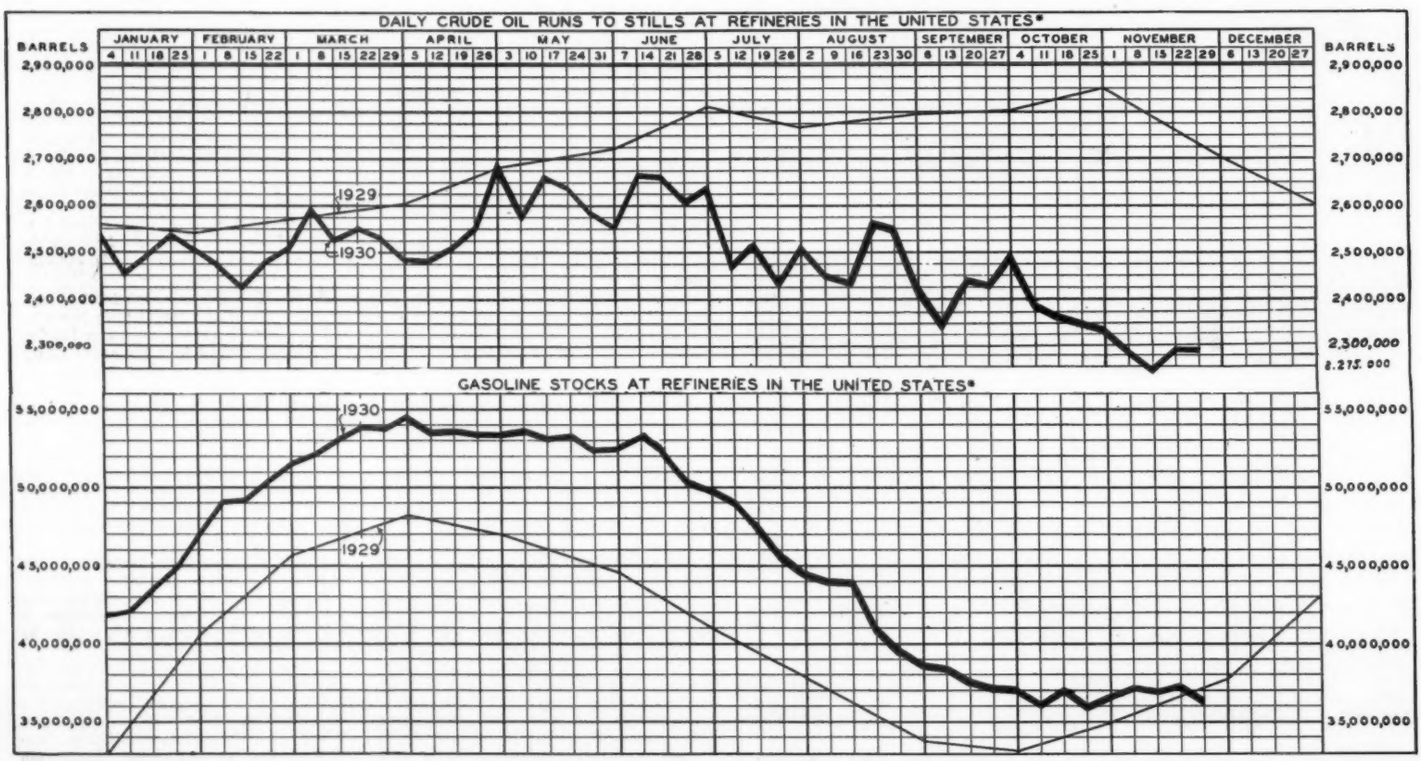
(Continued on Page 152)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending November 29.

	Week ending November 29				Week Ending November 22				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	453,100	5,563,000	11,182,000	100.0	429,400	5,343,000	11,566,000	100.0	454,857	5,998,000	7,431,000
Appalachian	93.8	74,300	778,000	1,025,000	93.8	71,300	766,000	1,029,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	97.5	260,600	4,255,000	3,978,000	97.5	257,600	4,270,000	3,914,000	98.6	289,300	5,433,000	3,505,000
Oklahoma, Kansas, Missouri	89.4	250,900	2,325,000	4,583,000	89.4	258,100	2,108,000	4,603,000	87.7	263,428	3,604,000	3,277,000
Texas	91.9	478,300	6,292,000	11,017,000	91.9	527,400	6,393,000	10,730,000	90.7	539,357	6,590,000	13,757,000
Louisiana and Arkansas	98.3	146,700	1,295,000	2,261,000	98.3	148,100	1,253,000	2,138,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.1	43,300	1,517,000	1,029,000	93.1	45,300	1,509,000	1,017,000	93.3	41,614	3,273,000	973,000
California	98.8	539,100	15,262,000	103,793,000	98.8	553,600	14,890,000	104,257,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,246,300	37,287,000	138,868,000	95.7	2,290,800	36,532,000	139,254,000	95 4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	354,300	5,030,000	8,290,000	100.0	406,700	5,149,000	8,000,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	98,300	1,011,000	1,291,000	100.0	101,900	986,000	1,173,000	100 0	108,514	1,877,000	3,818,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

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ALWAYS A BOOMERANG

The oil industry is experiencing a demonstration of the too-often forgotten fact that the distress price of today is the going market of tomorrow.

The refining and marketing end of the industry is having an illustration of the inevitable results of the policy under which little attention is paid to the normal marketing areas.

In the domestic end the refiners have in most cases endeavored to maintain healthful marketing conditions in the territory which they consider the normal outlet for their products. Many of them, however, have had surpluses, and in the disposal of this excess material have not hesitated to resort to distress prices in sections far removed from their plants. Naturally, in doing this they have been required to face high transportation costs which means a low net return at the plant.

For instance, in the Mid-Continent recent reports show that domestic grades of gasoline have been sold in the western states, California, Washington, Utah, and practically the entire Rocky Mountain area involving freight hauls, in many cases, of from 1,000 to 2,000 miles. They have also made long distance shipments to points in the east and southeast.

Refiners in other areas have observed a similar policy in disposal of what would in many cases be but a small fraction of their entire output, justifying themselves apparently on the theory that it would be better to dispose of part of their output at a loss as long as they kept their plants in normal operation.

In the export end the past few weeks has seen the collapse of the efforts started two years ago to stabilize the foreign markets. Major exporting interests in this country, co-operating with large foreign units, were able for quite a long period to establish a stable market situation in contrast to the chaotic conditions which had prevailed in previous years.

Certain sellers, however, eventually took the opportunity to undersell the general market which was subscribed to by more than 90 per cent of those engaged in that business. This condition finally became so acute that those who were trying to bring about a healthful condition could no longer overlook the losses in volume of their business with the outcome that this end of the market has gone back to the old "dog-eat-dog" methods of the past.

Consider for a moment the position of those who made the initial reduction in order to secure a greater volume of business. They found that the prices they counted on to get them some extra business were soon met by a competitor and they were forced to again reduce their prices until gradually this development terminated in a demoralized condition in which little attention was paid to quotations which gave a reasonable return on operations and investments.

The price cutter by his short-sighted policy in the end finds he lost the volume he started out to obtain and as a result of the market being down he is placed in the undesirable position of operating at a loss.

In attempting to ruin the market of others he has ruined his own.

With crude oil production in this country so well distributed through refineries strategically located at consuming centers and with our modern transportation system there are few consuming points that are not favorably located from the standpoint of a refinery source of supply. This is being supplemented by the new development of the gasoline pipe line and this simply means that no refiner can hope to market his products half way across the continent, absorb the necessary freight rates, and expect to operate profitably. When he attemps this he is simply ruining the market which he invades and this in the end means general low prices under which he suffers as much as anybody else.

"Carrying coal to Newcastle" has passed into history as the apex of absurdity, but it is matched by the attempt to unload surplus gasoline in any section of this country without breaking down the general market structure.

There is never any area that is not adequately supplied with all the motor fuel it can conceivably consume. Gasoline is one commodity the salesman is never "just out of."

How hopeless, therefore, must it be to think that by shipping excess production out of one territory into another, no matter how far removed, it can be sold at a distress price without boomeranging back.

The very same notion which impelled the original offender to try to dump his surplus in another's territory will inevitably occur to the other man when he finds himself unable to sell his product because of underselling competition.

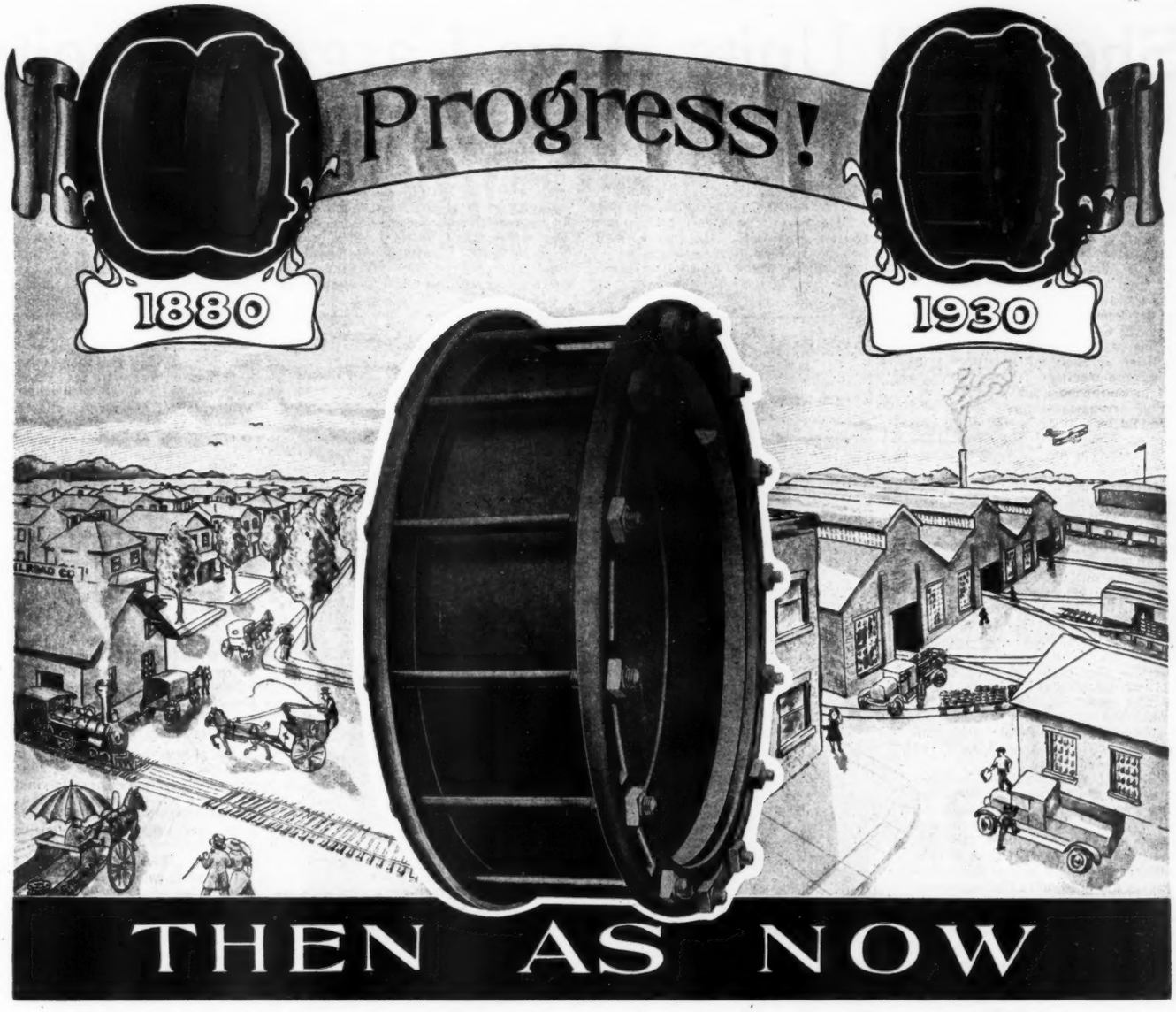
It has been tried and has failed so often that it surely must have sunk in by this time and that is the main hope that this winter may see refiners limiting their operations to what they can reasonably hope to sell at a fair return in their own normal territory.

If they do not know by this time that excess anywhere will break the market there is little hope for the industry ever learning that all important lesson.

The final phase of this situation has been the demoralization of the refinery market after constructive efforts over a period of time had been able to bring about more healthful conditions.

The industry is now faced with the necessity of going back over the ground and repairing a situation which it was never necessary for it to suffer. Such a condition was unnecessary because every refiner can readily determine in advance what the demand for refined products will be in the territory in which he operates. If this demand, from the standpoint of the individual refiner, has grown less it would be far better for him to reduce his refinery operations in line with this condition than to attempt to maintain his full operation and create a surplus which has to be marketed at distress prices.

It is just as inconsistent for the refiner to attempt to absorb 5, 6 or 7-cent per gallon freight rate in the case of gasoline as it would be for him to attempt to operate on crude which has cost him from 25 to 50 cents a barrel more than a competing refinery. The net back at the plant is what determines profitable operation and not volume of material sold at delivered prices at the point of consumption.



DRESSER COUPLINGS *Dominate!*

1880 S.R. DRESSER MANUFACTURING CO. 1930
BRADFORD, PENNA.

Shell Still Units Have Large Capacity

Recirculation, Efficient Heat Exchange and Fractionation Enable Battery to Refine 45,000 Bbls. Daily

By C. O. Willson

Through rapid circulation of the crude oil within the stills, coupled with efficient heat exchange and fractionation, the Associated Oil Co. at its Avon, Calif., refinery is obtaining highly satisfactory results from a battery of shell stills operated as a crude oil topping unit.

The development department of the Associated Oil Co. over a period of several years has made a special study of the possibilities of shell still distillation in removing the fractions from gasoline to gas oil in California crude oils. Various operating arrangements have been used and the Battery 36-41, with which this description is concerned, incorporates the latest development applicable to this type of operation.

The battery consists of six 12'x45' shell stills now operated as two units of three stills each with a third unit consisting of a convection coil known as an economizer operated with the flue gases from the shell stills and a small tube still. The entire battery has a daily crude oil capacity of 45,000 bbls. taking 50 per cent of the crude charge overhead as finished products except for the chemical treatment of the gasoline and kerosene fractions.

Reflecting the rapid progress in the design and operation of refinery equipment, these same six stills a few years ago could not have refined more than 8,000 bbls. of crude oil daily with reruns of the lighter fractions necessary to secure finished products.

Fuel and labor costs in the operation of the battery are comparable with those of other types of modern topping units of similar capacity. Operated with various grades of California crudes, the average continuous run of the units is now in excess of 200 days before shutdowns for cleaning are necessary. The shutdowns are due to required mechanical repairs, as the still bottoms never become dirty. Through perfections in operating details, maintenance costs have been reduced to a minimum, despite the fact that many of the crudes ordinarily present important corrosion problems in refinery processing.

Operation of Unit

The essential features in the operation of a unit consisting of three shell stills are shown in Chart 1. The crude oil is obtained from a balance tank having a capacity of 178,000 bbls. This size tank is used in order to blend in large quantities the several grades of crude generally refined at the plant. The crudes are obtained from the central and southern fields of California. The crude oil charge usually averages from 28° to 30° gravity.

It will be noted in the chart that the crude charge is split after leaving the pump and before any preheating takes place. Although the preheating operation can be altered to take care of changing operating conditions, the arrangement shown in the flow diagram is typical.

Part of the crude charge first passes through two partial condensers in the vapor line of the light gravity stream (G 1) from the tower and then to two condensers in the lowest gasoline stream (G 3). The crude charge then returns to one of the main charging lines as shown in the chart. Part of the crude oil also passes through three partial condensers in the middle gasoline cut (G 2), returning to the main charging line. These streams to the partial condensers are operated so as to give the control desired in the specifications of the overhead gasoline streams.

In the liquid heat exchangers, the split crude charges first pass through the gas oil heat exchangers and then in series through two residuum heat exchangers. The fuel oil residuum and gas oil from the tower are split equally in passing through the heat exchangers which are the closed type.

After passing through the last heat exchanger where the crude is finally preheated by the hot residuum direct from the tower, the crude charges again are merged at a temperature of approximately 350° F. The crude discharges near the top of the 8'x89'6" bubble tower, which serves as a combination stripper, evaporator and fractionator.

The preheat obtained is sufficient to strip off the light fractions of the crude oil giving a high gravity gasoline stream representing from 10 to 13 per cent of the crude oil charge. This is taken off at the top of the towers, the condensate from the partial condenser being returned to the tower as shown in chart for all gasoline streams.

Below the base of the stripping section in the tower, the crude oil, minus the light gasoline fractions, is removed and in a gravity flow is divided equally among the three shell stills. A still temperature of approximately 600° F. is maintained. The overhead vapors from the three stills are combined in one vapor line and enter the tower at the same point for fractionation.

The residuum from the three shell stills is combined and pumped to the base of the tower which serves as a stripper. Fifteen hundred pounds per hour of stripping steam is used. Additional gasoline cuts kerosene and gas oil are removed from the sides of the tower, as shown in the flow diagram.

The tower is equipped so that side cuts can be changed in accordance with the products desired and obtainable from the crude oil. In regard to the gasoline fractions, a flash drum is provided, and with this added facility the company takes care of its demand for special naphthas. Both export and the domestic grades of gasoline are refined with the battery.

No rerunning of the gasoline and kerosene streams is necessary, only chemical treatment being required. The Associated company uses the Edelenau process at its refineries in the treatment of kerosene.

Economizer Unit

So far as the heat exchange and fractionation are concerned, the operation of the economizer and tube still which constitute the third unit of the battery is practically the same as in the case of the two shell units. The crude is preheated in the same manner and discharges into the tower for the removal of the light gasoline fractions. The crude from the tower goes to a surge tank. The

(Continued on Page 170)

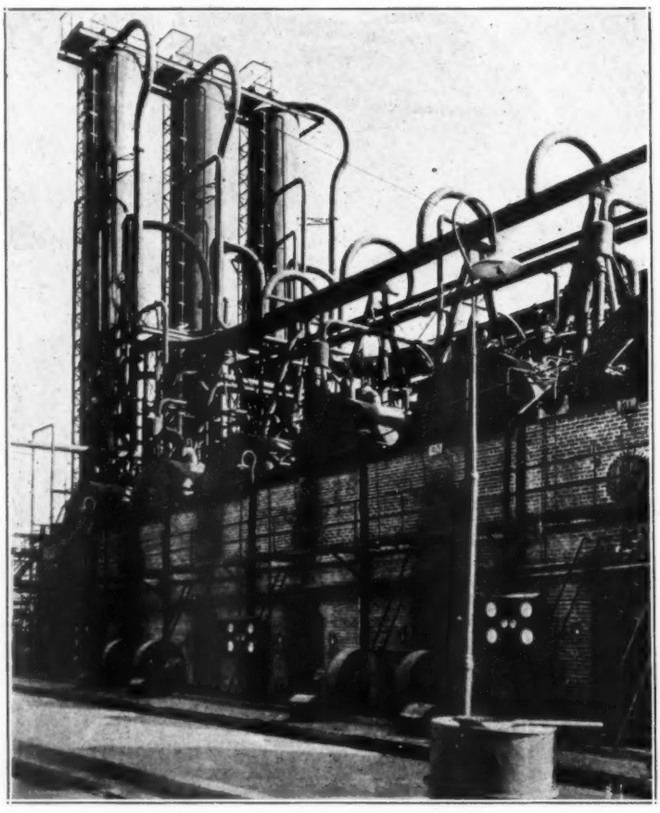


Figure 1—View of crude oil topping battery at Avon, Calif., refinery of the Associated Oil Co. This battery, which includes economizer and small tube still shown in Figure 2, has a capacity of 45,000 bbls. of crude oil daily taking approximately 50 per cent overhead.

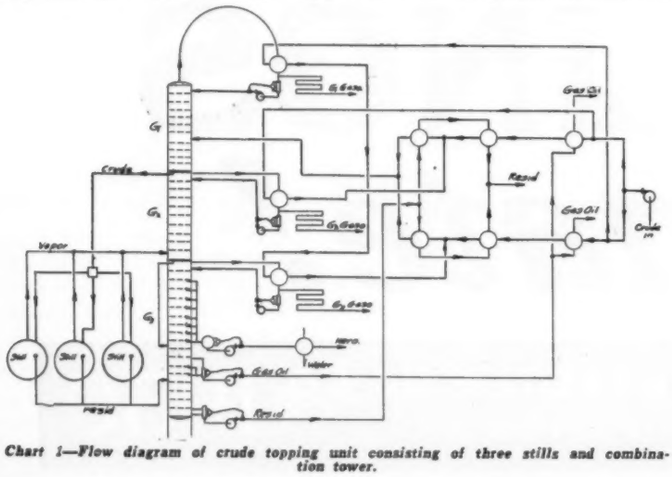


Chart 1—Flow diagram of crude topping unit consisting of three stills and combination tower.

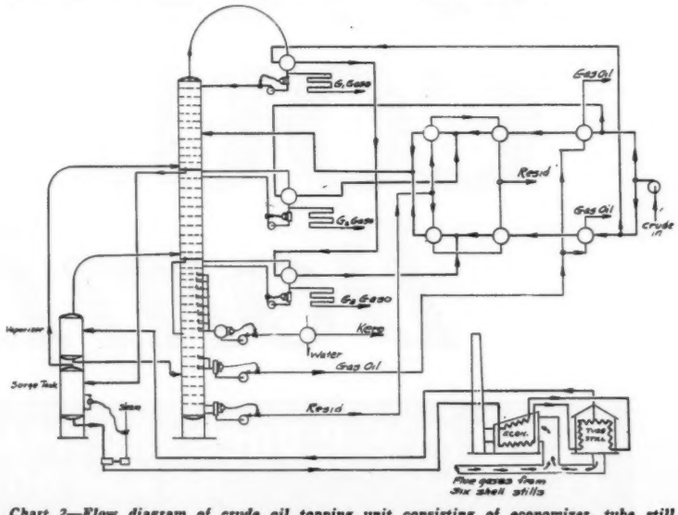
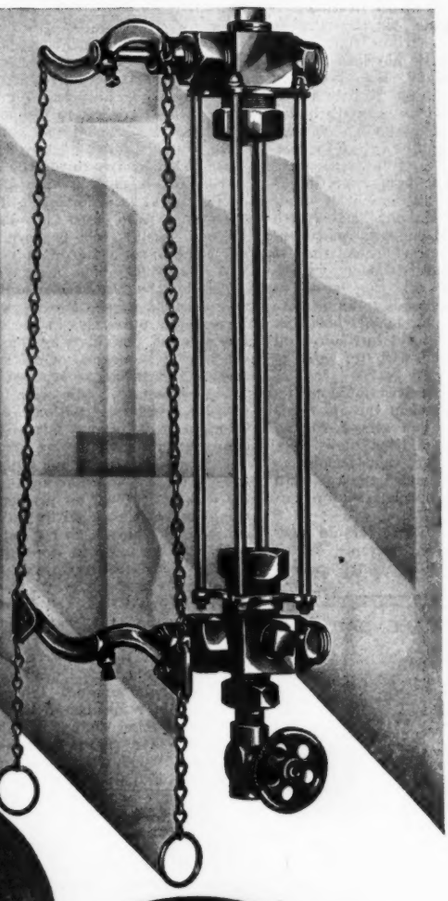


Chart 2—Flow diagram of crude oil topping unit consisting of economizer, tube still and combination tower.

PENBERTHY PRODUCTS

WHERE SERVICE IS SEVERE—USE THE PENBERTHY NAVY TYPE GAGE



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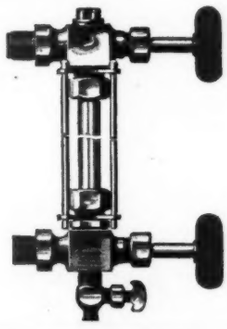

PRAIRIE SEEKS WAY TO PREVENT CUT IN RUNS FROM OLD WELLS

The Prairie Oil & Gas Co. is now buying crude oil only in the old fields of Oklahoma, Kansas and North Texas, and only one-third of the quantity it purchased in those fields up to December 1. Following instructions to the Prairie Pipe Line Co. to discontinue running oil from leases on which it purchased oil in Oklahoma City, Voshell, Kans., and in the Texas Panhandle, the Prairie Oil & Gas Co. will withdraw as a buyer in the Greater Seminole Field in Oklahoma effective December 5, and has given instructions to the Prairie Pipe Line to run only one-third of the quantity of crude it has been running from all leases in other fields in Kansas, Oklahoma and North Central Texas. The company will continue to run its own production; that of the Producers & Refiners Corp. (which it controls), and the oil from leases in which it has a partnership interest. As this oil amounts to over 50,000 bbls. per day the company need not buy much oil to make its runs even with its sales to refiners.

The news that the Prairie would cut its purchases by two-thirds in the old fields which the company has served for so many years came as a hard blow to a host of operators, who kept telephones busy all day Monday and Tuesday in an effort to induce the purchaser to reconsider.

In eastern Kansas and in the old Bartlesville sand fields in northern Oklahoma where the Prairie has bought nearly all the crude produced in the past quarter of a century producers are left with practically no market for the most of their oil. In the flush and semiflush fields efforts were being made early this week to provide outlets for the oil which the Prairie had turned back, but the thousands of old "stripper" wells with their fractional part of a barrel production per day cannot hopefully look for buyers and their owners are left to wonder how they can keep these wells from going to ruin.

In cutting down its purchases in the older fields by two-thirds the Prairie Oil & Gas Co. is putting about 23,000 bbls. on the market and for much of this crude there appears to be no immediate market. Prairie officials told producers on Monday that if other crude oil purchasers will buy 23,000 bbls. a day of oil produced by the Prairie, or any considerable part of it, the Prairie will in turn increase its purchases in the old fields a like amount. In this way the problem of the fate of thousands of old wells in the three states would be successfully solved. The Prairie makes this offer in an effort to solve a serious situation brought about by no fault of its own, but by the rapidly changing crude oil buying situation.

If it is not possible for the Prairie Oil & Gas Co. to make arrangements as to the sale of its own oil production which would make it possible to purchase more oil from the old fields the fate of many wells appears to be in jeopardy. The Oil and Gas Journal interviewed several owners of wells in the Nowata, Chelsea, Bartlesville, Bird Creek and Eastern Osage Fields, but in every case there was an uncertainty as to their line of action. All of them hoped that a way could be found to permit them to sell a greater proportion of their product than one-third. When it is remembered that the combined production of over 25,000 wells in Oklahoma is no more than 25,000 bbls., and that 19,447 wells in the state produce only 11,316 bbls. or an average of .58 bbl. per well per day, to reduce wells of this kind to one-third would mean reducing them to a production averaging about 8 gallons of crude oil per day. The Prairie Pipe Line Co., the oldest pipe line in the State, runs oil from more of such wells than any other line, and to save them for the future, the Prairie welcomes any fair solution of the problem that will not require it to add crude oil to its storage.

OIL MAN'S CALENDAR

DECEMBER

1-5—New York, annual meeting, American Society of Mechanical Engineers.

1-5—Memphis, Tenn., ninth annual Asphalt Paving Conference, Hotel Peabody.

2-4—Omaha, Neb., convention, Nebraska Independent Oil Men's Association, Paxton Hotel.

3-4—Indianapolis, Ind., Indiana Petroleum Association, Hotel Severin.

8—New Orleans, La., American Institute of Chemical Engineers.

11-13—Great Falls, Mont., joint convention, Montana chapter, Rocky Mountain Oil and Gas Association and Oil and Gas Association of Canada.

15-16—Knoxville, Tenn., Tennessee Oil Men's Association, Farragut Hotel.

JANUARY

3-10—New York, National Automobile Show.

10-16—St. Louis, Mo., twenty-eighth annual convention, American Road Builders Association.

14-15—Minneapolis, Minn., Minnesota division, Northwest Petroleum Association, Radisson Hotel.

19-23—Detroit, Mich., annual meeting, Society of Automotive Engineers Book-Cadillac Hotel.

24-31—Chicago, National Automobile Show.

29-30—Grand Forks, N. Dak., North Dakota division, Northwest Petroleum Association, Dacotah Hotel.

FEBRUARY

16-21—San Francisco, Calif., National Western Metal Congress and Exposition.

MARCH

16-22—Los Angeles, Calif., second annual Exposition, Oil Equipment and Engineering Exposition.

19-20-21—San Antonio, Tex., American Association of Petroleum Geologists, Gunter Hotel.

MAY

4-9—Charlotte, N. C., Good Roads Convention.

Memphis, Tenn., Natural Gas Department, A.G.A.

CONSIDERING FUTURE PLANS OF EXPANSION

The oil division of the Cities Service Co. has under consideration plans for laying a crude oil pipe line from the Oklahoma City Field to the Gulf and the erection of a refinery at some point along the Gulf Coast, but nothing definite may be announced at this time. It is planned to supply the company's Gainesville, Tex., refinery from this line also.

This study is being made as part of a general expansion program of refining and marketing facilities and if carried out will give the company representation from a manufacturing standpoint in the Mid-Continent, Atlantic seaboard, Chicago and Gulf Coast refining areas. A pipe line from the company's producing properties in the Oklahoma City Field to the Gulf would afford a convenient means of supplying its Philadelphia and Boston refineries with crude.

MAGNETIC STORM

Tucson, Ariz., observatory of the United States Coast and Geodetic Survey reported a magnetic storm as beginning at 9 a.m. (C.S.T.) on the twenty-fourth just as the last issue of The Oil and Gas Journal went to press. This storm ended at 2 a.m. (C.S.T.) on the morning of November 26. The telegrams were as follows:

"Storm began twenty-fourth. Fifteen. Moderate."

"Storm ended twenty-sixth. Eight."

High Spots in Field News

KANSAS

Voshell and Welch Pools extended. Disappointment in Caldwell area.

GULF COAST

Subsalt production at Barbers Hill thought to promise wide potential area.

NORTH LOUISIANA-ARKANSAS

Slight extension of Zwolle eastern area. Six completions in Richland Monroe.

CALIFORNIA

Belridge Field looks more important. Cut in gasoline and crude seems more imminent.

NORTH TEXAS AND PANHANDLE

New rules issued for Panhandle district. Wichita Falls operators working out adjustment.

EAST CENTRAL TEXAS

Well extends Joiner Pool mile west. Another shutdown with 180 feet of oil and mud in hole.

SOUTHWEST TEXAS

Two deep tests in Live Oak County abandoned. San Patricio test makes 150 bbls. and 40,000,000 feet of gas.

OKLAHOMA

Allen Field, Pontotoc County, extended quarter mile by 500-bbl. well at 1,900 feet. New work in Tatums district.

WEST TEXAS

Yates proration extended six months; nominations 89,500 bbls. Runnels County producer deepened. Big Lake wells being tubed.

MISSISSIPPI

Hinds County well makes 15,000,000 feet of gas, an estimated 10,000 bbls. of salt water and 200 bbls. of 13 gravity crude for two weeks.

ROCKY MOUNTAIN AREA

Hobbs operators considering new proration plan. Moffat County, Colorado, has 35,000,000-foot gas well. Deep well at Pilot Butte, Wyo.

Late Fields

EAST CENTRAL TEXAS

FORT WORTH, Tex., Dec. 2.—Anderson's No. 1 Bradford, Rusk County, is shut down at 3,592 feet with 180 feet of oil and mud standing in the hole. Stroube and Stroube's No. 1 Frederick, Ximinez Survey, Rusk County, made one small head of oil, total depth 3,618 feet. The first named well is east of the Joiner discovery and the latter well is a north offset, both looking as if they would make small wells.

OKLAHOMA

The actual production from the Oklahoma City Field for the seven days ending December 2, showing each day's production was as follows:

Date—	Bbls.	Wells prod.	Wells comp.
November 26	125,758	100	657
November 27	79,846	70	657
November 28	68,427	59	657
November 29	120,805	89	658
November 30	118,136	104	658
December 1	98,351	84	658
December 2	106,899	90	659

Indian Territory Illuminating Oil Co.'s No. 7 Trosper and others, NE cor. NW SW, Section 13-11-3w, was reconditioned after being bailed in several months ago. The well was completed as a gas well gauging 102,000,000 feet of gas and no oil. When first bailed in it started leaking around the connections and was killed with mud. The total depth of the well was 6,456 feet in sand.

Wirt Franklin Petroleum Corp.'s No. 2 Shanan, SW cor., Section 2-11-3w,

(Continued on Page 155)

HOBBS FIELD OPERATORS DISCUSS PRORATION

FORT WORTH, Tex., Dec. 1.—Operators in the Hobbs Field, New Mexico, met Saturday at Dallas to discuss proration of that field. Steps were taken to eliminate unnecessary opening of the producing wells, and a motion by Kay Winship of the Gypsy Oil Co., Tulsa, providing that present gauges be used until January 15, and that a curve which has been drawn by the engineering committee to show relation of flow through tubing to flow through tubing and casing, be accepted tentatively, was passed unanimously. On January 15 all wells in the field will be gauged through tubing only. These gauges will be used for three months.

The Amerada Petroleum Corp. and Tidal Oil Co. were disposed to seek a larger outlet for the field, and neither has signed the new agreement.

J. R. McWilliams of the Skelly Oil Co. urged the operators to refrain from opening wells wherever possible because such opening of wells may damage adjacent producers, and eventually damage the field.

SCORE SHEET ON OIL PRODUCTION

Below is shown allotted average daily production in the United States from October 1, 1930, to April 1, 1931, suggested by the American Petroleum Institute's special committee on the economic situation, and the actual daily average production during the week ending November 29:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
Okla., Kans., S.W. Tex., North Tex.*	953,700	902,961	.....	50,739
West Texas and S.E. New Mexico	316,300	312,577	.....	3,723
North Louisiana-Arkansas	86,400	96,120	9,720	.....
Gulf Coast	177,800	182,460	4,660	.....
Rocky Mountains	58,600	58,787	187	.....
California	530,100	602,500	72,400	.....
Other fields	110,600	112,000	1,400	.....
Total	2,233,500	2,267,405	88,367	54,462

Net average daily overproduction, 33,905 bbls.

*North Texas includes North, Central and East Central Texas and Texas Panhandle.

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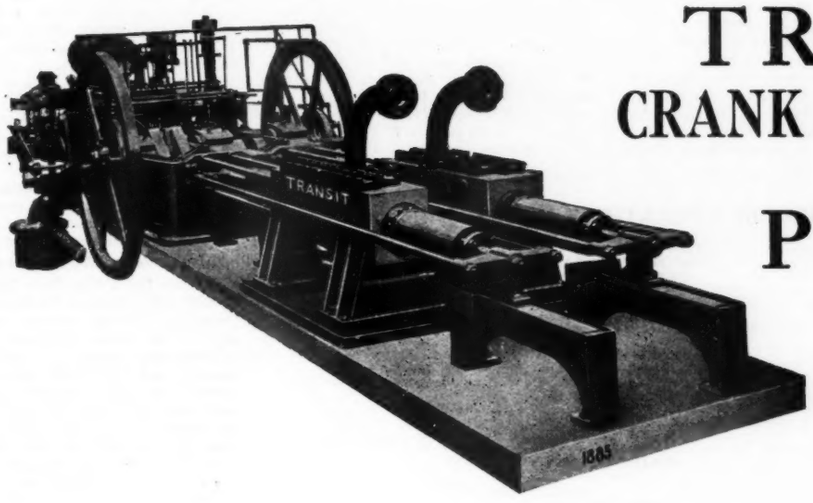

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E. L. Wilson Hardware Company

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Pratt-Gilbert Co.

ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

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Tulsa
Houston

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

New York
Philadelphia
Cleveland
Pittsburgh

Oklahoma Producers Seeking Market

Prairie's Withdrawal as Buyer in Seminole and Drastic Reduction of Runs in Other Fields Is Embarrassing

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's estimated production for the week ending November 29 was near the same level as in the previous week, and is considerably under the allowable for the month of November. The daily average for the week was approximately 486,500 bbls. while the allowable was 545,000 bbls.

Phillips Petroleum Co., Hicks Drilling Co. and others' No. 1 Crouch, NW cor. SW Section 5-6-5, a wildcat near Sacred Heart, in southeastern Pottawatomie County, was drilling in Simpson dolomite at 4,350 feet, corrected, with a hole full of fluid, of which 1,600 feet was water. The well flowed between 60 and 70 bbls. into the slush pits in 20 minutes while drilling at 4,302 feet. The test is located several miles east of the Asher Pool, in the same county.

Prairie Oil & Gas Co. notified operators in the Greater Seminole area during the week the company was withdrawing as a crude oil purchaser in that area December 5, and it would be necessary for operators to find new connections. The action of the Prairie Oil & Gas Co. affects approximately 37,000 bbls. of potential oil production. The company was handling about 19,000 bbls. of actual production a day of which about 7,000 bbls. a day was its own production. The company also advised producers it would again curtail all the rest of its crude oil purchases 66⅔ per cent. The reduction in crude oil purchases is due to the loss of a market outlet. It is believed that some of the operators affected are companies with pipe lines to which a connection will probably be made. Some of the Prairie Oil & Gas Co.'s production is being run by other companies, and it is expected the company will make the necessary arrangements to take over these connections. It is the fourth reduction Prairie Oil & Gas Co. has made in its pipe runs in different parts of the Mid-Continent Field, and it withdrew from the Panhandle of Texas, and reduced its takings in the Voshell Pool, in McPherson County, Kansas.

The search for Wilcox sand continues in Okmulgee and Okfuskee Counties. It comes at a time when wildcatting is discouraged on account of the overproduction of crude oil. Operators are hopeful of building up a potential that will increase the allowable production under the present proration order. During the last year few of the tests were successful in finding commercial production. This has not discouraged some operators, as several tests are being drilled deeper in search of deeper pay horizons. Mid-Continent Petroleum Corp. and others' No. 2 Dindy, SW cor. NW NE Section 31-11-11, Okfuskee County, was drilling deeper at 3,071 feet. It was an old well completed at 3,009 feet. Atlantic Oil Producing Co.'s No. 4 Fisher, SW cor. NW SE Section 36-12-10, Okfuskee County, was drilling in black shale at 3,125 feet. The well was a producer at 3,027 feet. Foster Development Co.'s No. 1 King, SW cor. SE Section 7-11-10, Okfuskee County, was drilling at 2,800 feet.

The second wildcat in Grant County to be completed as a failure during the present year was Bu-Vi-Bar Petroleum Corp. and others' No. 1 Hurst, C SW SW Section 25-26-5w, which found water in the Wilcox sand at 5,847-71 feet, and is being abandoned. The deep formations in Grant County have not as yet been found to contain oil or gas. The other test was drilled by the Gypsy Oil Co.

New potentials for the various pools in Greater Seminole and other prorated areas were taken on December 1 and 2. Potentials for the following pools will be arrived at by deducting 3 per cent from the potentials in effect in the month of November: Allen (shallow), Bowlegs, Old Earlsboro, Little River, Lovell-Marshall, Maud, Mission, Searight, Seminole, East Seminole, St. Louis Pools and such leases in the Carr City Pool as average below 100 bbls. a day per well.

The Allen (Wilcox) Earlsboro townsite, East Little River, Sasakwa, West Seminole Pools and leases in the Carr City Pool, that average over 100 bbls. per well were allowed to flow to full capacity on December 1. Production from the leases in these pools on that day will be potential for the month of December.

"A" wells in the East and South Earlsboro Pools were allowed to flow to full capacity on December 1, and the "B" wells on December 2. The total production from the "A" and "B" wells on these dates were the potentials for the month.

Potentials for the other leases in the State that were given the Class "A" rating effective October 28, were to remain the same until December 31, and the same for the small leases with production under 50 bbls. in pools other than Class "A."

New Work in Tatums

Operations in the Tatums Field in Carter County were increased during the week by four new locations. Two new producers were being added at the close of the week, and several other tests were shut down waiting for cement. The locations were Westheimer & Daube's No. 1, in the NE cor. NW, Section 25-1s-3w, on the south edge of the field. The Texas Company's No. 5 Eaves, NW cor. SE SW, Section 24-1s-3w. Magnolia Petroleum Co.'s No. 1 McCrory, SE cor., Section 10-1s-3w, is located about 1 mile northwest of production in the old producing field. The Carter Oil Co.'s No. 1 Grooms, SE cor. NE NE, Section 24-1s-3w, is located in the north edge of the field.

Trevelyn Oil Co.'s No. 1 Meeks, SE cor. SW SW, Section 19-1s-2w, on the southeast edge of the Tatums Field, was preparing to swab. The oil was found in sand at 1,793-1,934 feet. C. L. Anderson's No. 6 Eaves, NE cor. NW SW, Section 24-1s-3w, was preparing to set a liner to make a production test. The oil was found in a series of sands at 2,357-2,640 feet. No. 7 Eaves, SW cor. NE SW, Section 24-1s-3w, is shut down with the casing cemented at 2,327 feet. Magnolia Petroleum Co.'s No. 3 Brady, SW cor. SE, Section 13-1s-3w, located on the north edge of the field, was shut down with casing cemented at 2,189 feet.

Magnolia Petroleum Co.'s No. 1 Weiss, SW cor. SE SW, Section 19-1s-3w, was drilling at 3,130 feet with nothing showing. It is approximately 1,000 feet deeper than any of the producing wells in the field. Same operators have a probable failure in No. 4 Pollack, SE cor., Section 14-1s-3w, which missed the sand and was drilling at 2,450 feet, with nothing showing. The Carter Oil Co.'s No. 1 Hopson, NE cor., Section 25-1s-3w, was spudding. It is located on the south edge of the southeast extension to the field.

Activity in the southeastern part of the State has been slow during the last few months but recently C. L. Cannady has assembled a block of 20,000 acres in the northwestern part of Pittsburg County, south of the Canadian River. It is expected several tests will be started on the block after it has been geologized. Three locations have been announced, No. 1 Turner, NW cor. NE NW, Section 14-8-14; No. 1 Bynum, SW cor. NE SW, Section 9-8-14, and No. 1 Travis, C SW NE, Section 5-7-14, all in Pittsburg County.

Noble County Wildcats

Wildcats in Noble County are marking time while the producing wells are holding steady. Empire Oil & Refining Co.'s No. 2 Freyler, SW cor. NE, Section 4-20-1w, in the gas pool southwest of Perry, was spudding. The pool has 10 completed gas wells and one drilling test. Prairie Oil & Gas Co.'s No. 1 M. Upperman, SW cor., Section 22-22-1, was drilling at 2,400 feet. Barnsdall Oil Co.'s No. 1 Miksch, NW cor. SW, Section 12-21-1, was underreaming 10-inch casing at 3,200 feet. Magnolia Petroleum Co.'s No. 1 Wolleson, SE cor. NE, Section 21-21-2w, was drilling at 4,900 feet, and the formations are believed to be running low on structure. The Magnolia Petroleum Co.'s two producing wells are steady producers, No. 2 Young, NE cor. NW NW, Section 22-21-2w, was averaging around 550 bbls. a day under proration and No. 4 Sams, SE cor. SW SW, Section 15-21-2w, is making 250 bbls. under proration. Prairie Oil & Gas Co. and others' No. 1 Wentz, has been making 87 bbls. a day from the Layton sand at a total depth of 3,380 feet.

Marshall County which was active during the summer has only a few operations at the present time. Mutual Oil Co.'s No. 1 Sharp, NW cor. SE SE NW, Section 3-5s-6, a wildcat about 5 miles northeast of production in the Madill district, was spudding. D. H. Curry and others' No. 1 Ward, NW cor. SW SE, Section 15-5s-6, a wildcat about 4 miles northeast of the Madill Field, has resumed drilling at 1,245 feet after being shut down for several days.

In Hughes County, Irwin and others' No. 1 Jones, SE cor. NE, Section 30-5-10, a wildcat, had the Wapanucka formation at 4,305-4,405 feet and is shut down at 4,515 feet. Gilcrease Oil Co.'s No. 1 Deer, NE cor. SW, Section 20-6-9, a wildcat in the southern part of Hughes County, found a sand at 1,595-1,612 feet with a showing of oil and water. It was drilling deeper at 1,700 feet.

Gasoline Well in Harper

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Section 14-26-24w, Harper County, a wildcat in the northwestern part of the State, has been opened and is producing around 50 bbls. a day of gasoline and 14,000,000 feet of gas. The gasoline is being pumped through a 2-inch pipe line from the well to a loading rack at Laverne, Okla., about 4 miles distant and shipped out in tank cars. The well was originally drilled to a total depth of 8,589 feet, the deepest in the State, and plugged back to a sand at 5,300-5,400 feet, where the gas and gasoline were found.

Empire Oil & Refining Co.'s No. 1 Bruce, C NE SW, Section 12-25-20w, Harper County, a wildcat in the southeastern part of the county, was drilling at 7,250 feet, with nothing showing and will be drilled deeper.

Deep Test in Alfalfa County

Operations are expected to be resumed at J. W. Bailey's No. 1 Acre, SW cor. NE, Section 14-24-11w, Alfalfa County wildcat, located on a 13,000-acre block in the southern part of the county. The test is to be drilled to the Wilcox sand. It has been shut down for several months at 4,660 feet, where the last string of casing was cemented. Tools are being moved in and operations resumed. Other companies interested in the block with scattered acreage are Eason Oil Co., Indian Territory Illuminating Oil Co., Mid-Kansas Oil & Gas Co., The Texas Company, Twin State Oil Co., Mid-Continent Petroleum Corp., Ramsey

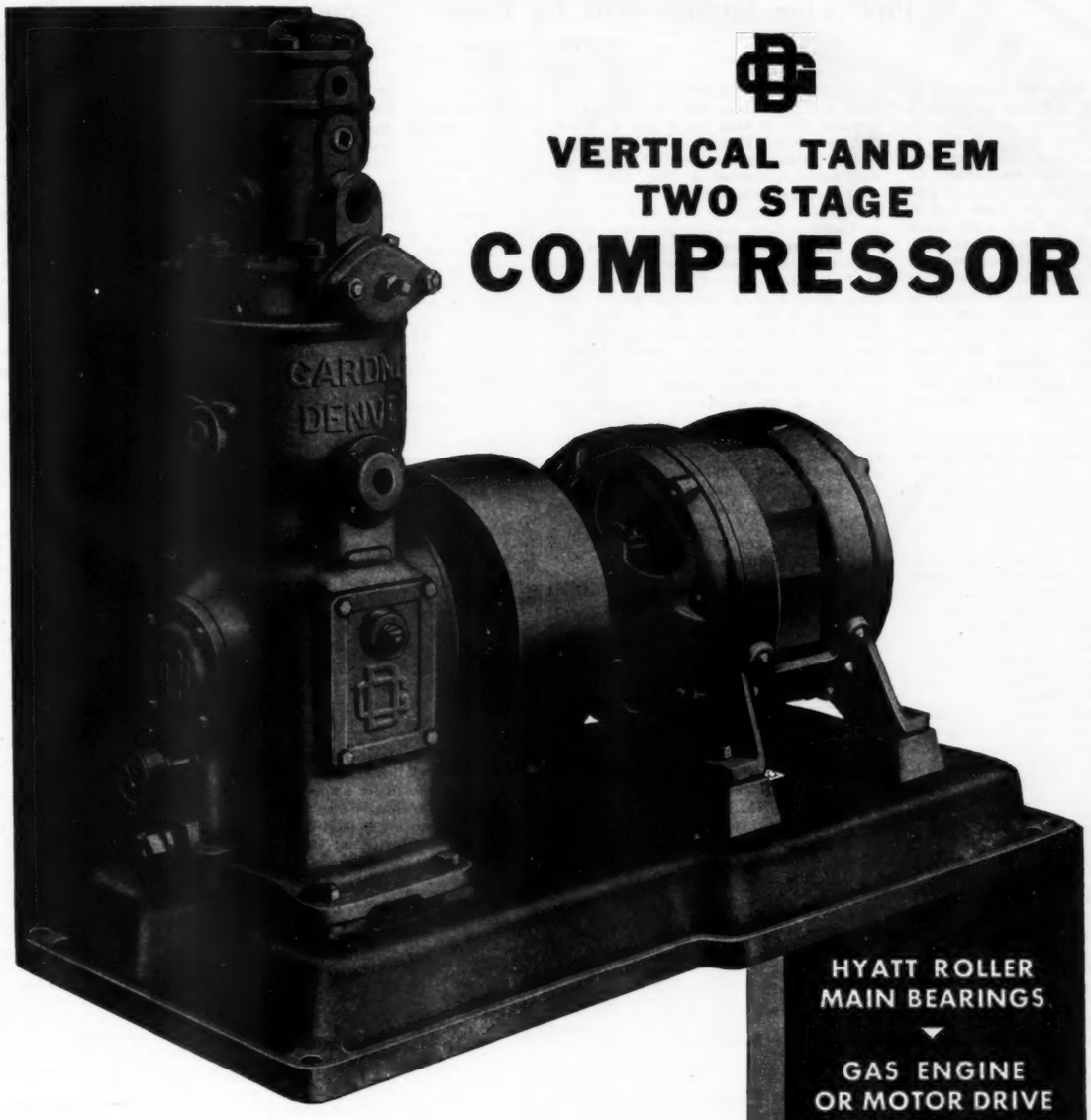
(Continued on Page 132)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

Company, farm and location—	Remarks:
ALFALFA COUNTY	
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; shut down.
BECKHAM COUNTY	
Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	Shut down 765 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-2-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	T. D. 1,558 ft.; abandoned.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Drlg. 1,925 ft.
BLAINE COUNTY	
Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Drlg. 4,246 ft.
CADDO COUNTY	
Magnolia's No. 1 White, SW SE Sec. 25-6-10w	Drlg. 4,880 ft.
Abernathy & Brown's No. 2 Houston, Sec. 24-6-11w	Shut down 1,090 ft.
Simms Pet. Co.'s No. 1 Cobss, SW NW Sec. 24-6-11w	T. D. 4,256 ft.; abandoned.
CLEVELAND COUNTY	
Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Shut down 6,518 ft.
COAL COUNTY	
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Shut down 125 ft.
Mid Western Oil Co.'s No. 1 Gum Bros., C SW NW Sec. 30-3-10	Drlg. 1,485-1,515 ft.; 3,000,000 ft. gas.
A. M. Van Orden's No. 1 Jamison, SE SW Sec. 31-1-9	Abandoned 1,668 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9	Drlg. 5,055 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Abandoned 3,080 ft.
COMANCHE COUNTY	
Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w	Shut down 1,985 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.
GARFIELD COUNTY	
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,825 ft.
GRADY COUNTY	
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Shut down 100 ft.
GREER COUNTY	
French's No. 1 Murphy, SW NW Sec. 23-7-21w	Shut down 500 ft.
HARMON COUNTY	
Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w	Shut down 2,593 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w	Shut down 625 ft.
HARPER COUNTY	
Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w	Drlg. 7,250 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w	20,000,000 ft. gas 5,250-5,400 ft.; total depth 8,589 ft.; shut down; sprayed 50 bbls. gasoline.



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Kansans Disagree on Proration Plan

Oklahoma Method Affecting Small Wells Not Favored. Pipe Line Survey Will Be Made. Production Down

By W. A. Spinney
Staff Correspondent, Kansas Fields

The operators' committee appointed by State Umpire T. C. Johnson to create a new statewide proration plan has adjourned after finding it impossible to proceed further without first making a survey of the pipe line companies' requirements. The Oklahoma plan of prorating in old fields, as the 5-bbl. and 50 per cent plan, has not met with much favor and will probably not be adopted. It is believed the plan if adopted and applied to the "water pools" in the State would result in abandonment of hundreds of small wells in the older areas that are making water. An example of how the plan would ruin some of the leases was the case of one operator in Butler County, whose lease pumps 13,000 bbls. per day of water to obtain 400 bbls. per day of oil from 15 wells.

Indications are that the allowable production may be increased in some of the pools and reduced in others. Several areas in the State are believed to be producing more than 50 per cent of potential while others are restricted and almost entirely shut in.

The State's daily average production shows a decline of approximately 2,000 bbls. a day for the week ending November 29. The estimated daily average for the same seven days was 107,500 bbls. The decline is in the flush areas in the State. The new pool in Sedgwick County and the Voshell Pool in McPherson County show most of the decline.

In the Eastborough Pool, in Sedgwick County, several tests were nearing the pay horizons. Blackwell Petroleum Co.'s No. 1 Drollinger, in NW Section 31-27-2, found a showing of oil and a hole full of water in the chat at 2,951-56 feet. It was drilling below 3,000 feet and will be drilled to the Simpson sand horizon in hopes of extending the deep sand producing area in the Eastborough Pool to the south. Jones and Hershey's No. 1 Smyser, C NW, Section 19-27-2, found oil in the deep formation and extended the producing area a half mile to the west. The oil rose 2,500 feet in the hole in 10 hours from the Simpson sand at a total depth of 3,296 feet. It will be put on the pump.

Voshell Pool Extended

The Voshell Pool was extended during the week by the Dixie Oil Co., Amerada Petroleum Corp. and others' No. 1 Zarger, NW cor. NE SE Section 16-21-3w, McPherson County. The well was a half-mile south extension to the pool and lengthens the producing area, which runs north and south, to more than 3 miles. The test found the Viola lime at 3,381 feet and the Simpson sand at 3,412-20 feet, and the oil rose 2,150 feet in the hole in three hours from the pay at 3,420-25 feet. It later swabbed 50 bbls. an hour for two and one-half hours and is estimated to be a 1,000-bbl. well. After the brief swabbing test the well was shut down to await a pipe line connection. It will be put on the pump.

The Voshell Pool, with 93 completed wells, is the State's largest potential producing area. It is credited with a daily potential of 68,600 bbls.

Extend Welch Pool

The Welch Pool in the southeastern part of Rice County was extended during the week. Hipple & Rogers' No. 1 Rainey, NE cor. NW SE Section 3-21-6w, appears to be a good well. Oil rose 2,600 feet, in the hole, in one hour. The chat was found at 3,368-74 feet, which was 9 feet higher than the No. 2 Miller, the largest well in the field. The production in the field was extended a half mile to the south by the new well. The discovery well in the Welch Pool was completed in January, 1924, by the same operators. It was No. 1 Welch, SW cor. SE NW Section 35-20-6w, and made 130 bbls. from sand at 3,375-3,403 feet. The largest well in the pool to date was the Independent Oil & Gas Co.'s No. 2 Miller, NW cor. NE NE Section 3-20-6w, which had an initial production of 1,200 bbls. a day, being completed in May, 1927. The well averaged 950 bbls. per day the first year. No. 1 Rainey was shut in after making one flow, awaiting storage tanks.

Drilling Deeper in Canton Area

In the Canton area, north of the Ritz Pool, in McPherson County, the second deep sand well is expected to be completed in a few days. W. C. McBride, Inc.'s No. 1 Whitright, NE cor. SW Section 30-19-1w, is being drilled deeper after producing from the chat for several months making around 100 bbls. a day. It is the southwest offset to the Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, the discovery deep sand well in the area, and in the same section, which was completed for a 3,500-bbl. well from the deep sand. The south offset to the Garrett well is the Shell Petroleum Corp.'s No. 1 Lewis, NW cor. SE Section 30-19-1w, which was spudding.

Drilling for Gas

The Decker gas area in McPherson County is active with tests drilling and others preparing to drill. McPherson Oil & Gas Co. has three tests drilling and W. C. McBride, Inc., is spudding. Graham Brothers' No. 1 Robinson, C SE SW Section 10-19-2w, is a semiwildcat in the area and was drilling around 2,000 feet. The test is located on the west side of the producing area and if it finds commercial production it will extend the western limits of the area.

Aladdin Petroleum Corp.'s No. 3 Harris, NW cor. NE SW Section 19-22-11, Greenwood County, is rated as a 400-bbl. well from the Bartlesville sand at 2,020-47 feet. A production test is now being made of the well after being shot with 80 quarts, and cleaning out.

Prairie Assembles Block

Prairie Oil & Gas Co. has assembled a huge block of leases in Ellsworth and Lincoln Counties. The block consists of approximately 18,500 acres located in southwestern Lincoln County in Township 13-10w and in northwestern Ellsworth County in Township 14-10w. Core drilling of the block has been started and probably will be continued until the company has determined the value of the holdings and the location of possible structures. The acreage will be held for the future. The nearest production is in Russell County, which adjoins the block on the west.

Lyon County in the east central part of the State is expected to be tested by operators in the future. A few years ago several dry holes were completed in the county, but since that a small well has been completed in Section 30-20-10, and other tests have found showings which indicate an oil pool may be located near the area. Another test is being drilled by Bird, Hanley & Sheedy, in Section 31-20-10, south of the well and the showing found in other tests in the vicinity. Another well which has attracted attention to the eastern part of Lyon County and western Coffey County was the Prairie Oil & Gas Co.'s No. 1 Hatch, NW cor. SE Section 35-21-13, in Coffey County, a wildcat, which was completed for 80 bbls. a day, just east of the Lyon County line.

Caldwell Area Disappoints

The Caldwell area in Sumner County is proving a difficult place to secure oil and gas production. Since the Churchill Pool in the northeast part of the county, which was producing at its peak about four years ago, and the Oxford townsite pool, about two years later, the only pool found in the county was the State Line Pool. The Gypsy Oil Co. has the only producing well north of Caldwell, in an area where eight deep tests have been drilled. Many express the opinion the territory east, north and northeast of Caldwell has possibilities and sometime in the future an oil pool may be found. A wildcat well is now being drilled, Long and others' No. 2 Rex, SE cor. NW SE Section 22-33-3w. Several showings of oil and gas were found in another test drilled in the SE cor. of the same farm, but were not enough to make a commercial well and it was abandoned.

Gas in Grant County

The Hugoton gas field was extended into Grant County during the week when McKenna and others' No. 1 Sullivan, NE cor., Section 12-29-38w, found approximately 3,500,000 feet of gas in sand at 2,540-2,715 feet. It extends the producing area around 15 miles to the north into Grant County and it is the first commercial production in that county. The gas will be used in the pipe line distributing system in eastern Colorado and western Kansas.

The Hugoton Field continues to increase in production of gas and has now spread over approximately 50 square miles and has around 115 completed gas wells with an estimated open flow of 600,000,000 feet of gas. The area includes Stevens, Morton, Seward and Grant Counties in Kansas and Texas County in Oklahoma. The average depths of the gas producing horizon in the area is from 2,500 to 2,750 feet. The principal development of the area has been during the last year. In the early part of this year there were only a few completed gas wells in the area south of Hugoton, and the Argus Gas Co. announced it was going to drill 70 new tests in the area. It led the way to one of the most extensive gas drilling campaigns ever witnessed in the State. The announcement of the drilling campaign preceded the many gas pipe lines tapping the field which are destined to carry Kansas gas to the northern and middle western cities.

The gas wells in the area range in production from 1,000,000 to 16,000,000 feet of gas a day in wells thus far drilled. The gas is sweet, that is, it is free from sulphur.

Following are some of the latest completions for the Hugoton gas area. Drilling operations have slowed down with the coming of winter months: Western Production Co.'s No. 1 Burrows, C SW. Section 31-34-37w, Stevens County, gauged 1,150,000 feet of gas a day from a total depth of 2,685 feet. Argus Production Co.'s No. 3 Ratcliff, C SW, Section 8-33-37w, Stevens County, made 5,000,000 feet of gas a day from the pay at 2,590-2,685 feet. Missouri-Kansas Pipe Line Co. and others' No. 1 Youngren, NE cor. SE NW, Section 24-32-39w, Stevens County, flowed 1,450,000 feet of gas from 2,585-2,646 feet. Argus Production Co.'s No. 4 Ratcliff, C SE, Section 26-32-38w, Stevens County, made 3,400,000 feet of gas at 2,583-2,775 feet. No. 1 Porter, C SE, Section 9-32-37w, made 3,750,000 feet of gas at 2,576-2,778 feet.

Butler County

Empire Oil & Refining Co.'s No. 21 Houston, NW cor. SW SW, Section 19-26-5, has been completed for 130 bbls. in Viola lime 2,638-54 feet. No. 103 Koogler, NE cor. SW, Section 20-26-5, made 40 bbls. from sand 2,539-80 feet.

Comanche County

Empire Oil & Refining Co. staked location for No. 1 Jackson, SE cor., Section 28-34-17w.

Cowley County

Home Natural Gas Co.'s No. 1 Baird,

(Continued on Page 135)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Shut down 480 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.

BUTLER COUNTY

McCulloch and Empire's No. 1 Lilley, SW NW NW Sec. 23-23-5	Drlg. 2,246 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Drlg. 1,840 ft.

CLARK COUNTY

Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w	T. D. 6,909 ft.; plugged back to 6,530 ft. to test show gas.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 2,390 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14	Shut down 818 ft.
McGregor's No. 1 Wood, NE NW SW Sec. 20-22-15	Shut down 650 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Shut down 1,250 ft.

COWLEY COUNTY

Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8	Fishing 912 ft.
Tom Fine's No. 1 Boyd, NW NE Sec. 23-32-4	Shut down 2,650 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Drlg. 2,810 ft.

DOUGLAS COUNTY

Steinbuckle's No. 1 Unknown, SW NE NW Sec. 34-14-21	Shut down 1,100 ft.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w	Fishing 3,916 ft.

ELK COUNTY

Aladdin's No. 1 Donnell, NE SE SW Sec. 26-29-10	Wilcox 2,386-2,411 ft.; show oil; shut down.

ELLSWORTH COUNTY

Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w	Shut down 295 ft.
Milton et al's No. 1 Kester, SE NE Sec. 6-14-9w	Shut down 330 ft.
Aladdin and Carter Oil Co.'s No. 1 Barecky, C NW Sec. 3-16-10w	Shut down 2,718 ft.

FORD COUNTY

Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Shut down 4,300 ft.

GOVE COUNTY

Johnson and Atlantic's No. 1 Wright, SE NE Sec. 11-12-27w	Fishing 3,510 ft.
Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w	Drlg. 4,460-65 ft.; show water; fishing.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Clark, SW NE NE Sec. 11-9-25w	Drlg. 2,780 ft.
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w	Shut down 4,370 ft.

GRANT COUNTY

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w	Rigging up standard tools 2,435 ft.

GREENWOOD COUNTY

Staats et al's No. 1 Swan, NE NW Sec. 3-25-12	Rig.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12	Shut down 1,836 ft.

HARPER COUNTY

Atkinson et al's No. 1 Misak, SE cor. Sec. 25-34-6w	Drlg. 4,865 ft.
Beeler et al's No. 1 Bear, C NE Sec. 21-36-6w	Shut down 1,830 ft.

(Continued on Page 158)

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Mississippi Test Holding Attention

Slight Extension of Eastern Zwolle Area. Richland and Monroe Have Six Completions. Arkansas and East Texas Developments

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Dec. 1.—Mississippi has an oil well. Love Petroleum Co.'s No. 1 Maley in the SE NW Section 15-5-1e, Hinds County, has not been formally listed as either a gas well or a producer, but the fact remains that it has been making 15,000,000 feet of gas, much salt water—estimated at 10,000 bbls.—and 200 bbls. of 13 gravity crude for two weeks. During the past few days two pits 150x100 yards have been dug and the well is blowing wild into them. Total depth is 2,494 feet with the bottom 7 feet in chalk.

Location is a mile and a half west of Gulf Refining Co.'s No. 1 Rainey in Section 13-5-1e, Rankin County, which made much the same show though with less oil content early in the development of the Jackson district from around 2,500 feet. On the other hand, Cane River Oil & Gas Co.'s No. 1 Kabbles, NE cor. SW SW Section 15-5-1e, Hinds County, half a mile northwest of the producer and a quarter mile southwest of Hawkeye Gas Co.'s No. 1 Webster which extended gas production nearly a mile south and west, swabbed plenty of salt water from 2,560 feet. It was the second test and the well apparently will be a failure as it is already far below producing depth of successful wells in the area. Gulf Refining Co.'s No. 1 Hamilton in the SW SW Section 12-5-1e likewise has apparently hit a dry spot in the field. On the west edge of the most "densely populated" area of the Jackson district, with gassers east, north and west of it, this well was dry until it got down to around 2,650 feet. It had salt water on test at 2,625-40 feet with a slight show of this same heavy oil and at 2,978 feet was still in the chalk.

Two completions were made in the Hinds County side of the field during the week: Mississippi Petroleum Co.'s No. 1 Orphanage, SE SE Section 28-6-1e, confirming probable producing area for 5 miles northwest of the center of production, and an abandoned hole. The producer was completed at 2,489 feet with an estimated 25,000,000 feet of gas and the abandoned test was Universal Gas Co.'s No. 1 Sharbrough, SW SE Section 28-6-1e.

East Extension of Zwolle

A slight extension west of proven area of the so-called east extension of Zwolle, composed of a group of four or five wells in Section 4-7-11, was made when The Texas Company completed No. 1 Maines in the NE cor. SE Section 5-7-11, a quartermile west of nearest production, flowing 149 bbls. from 2,421 feet. The other two completions in Zwolle were failures. Lohman & Walker's No. 1 Hubley, a wildcat in the SE NE Section 21-7-11, 3 miles south of nearest production, was abandoned at 2,550 feet as a dry hole. It had been rather low on structure all the way down, topping the marl at 2,461 feet, whereas the latest producers in the east extension had been getting it at around 2,300-2,400 feet. Standard Oil Co.'s No. 1 Bowman-Hicks, in the SW NW Section 25-8-12, dry at 2,713 feet, added another to the list of failures in the north extension which looked at one time like a real pool but has since turned out not so good. There has been one dry hole for every producer in the area—and they all offset each other.

Lacy Petroleum Co. is reported to have had a show of gas at 2,360 feet on No. 1 Cooper in the SW NE Section 30-8-11, a mile and a half east of nearest production in the north extension, and has cemented 6⅝-inch at 2,270 feet for a test as well as to protect the hole. If it should make a gas well it will be something new in Zwolle, as up to date there has been barely enough gas to make the producers produce, and most of them have to pump. Immediately on completion of Sabine Syndicate's No. 1 Pearce, The Texas Company made location for No. 1 Stoker in the NW cor. NW SE Section 10-7-11, a quarter-mile southeast of the extension well, and Pelican Natural Gas Co. will drill No. 7 Louisiana Long Leaf Lumber Co. in the NE cor. NW SW of the same section, a half mile west and a little south of the new producer.

Richland and Monroe

Contrasted with the past two weeks, Richland and Monroe gas areas were quite active in the way of completions, Monroe area having one each in the three parishes, parts of which constitute the field, and Richland another three. Louisiana Gas & Fuel Co.'s No. 3 Sandidge, SW SE Section 15-20-4, Morehouse Parish, gauged 26,568,000 feet of gas at 500 pounds from 2,146 feet; Pipes & Mack's No. 1 Robertson-Reed, NE SE Section 10-18-4, Ouachita Parish, made 19,880,000 feet from 2,179 feet, and E. S. Hall's No. 5 Spencer, SE SW Section 14-20-3, Union County, gauged 2,867,520 feet at 1,030 pounds from 2,160 feet. In Richland Parish Hope Production Co.'s No. 1 Thomason, SW NW Section 14-16-6, made 25,477,450 feet of gas, total depth 2,450 feet. Louisiana Gas & Fuel Co.'s No. 1-A Noble, SE SE Section 35-16-6, in the southeast corner of proven area, made 40,572,000 feet at 660 pounds from 2,450 feet. Palmer Corp.'s No. 13 Rhymes-England Planting Co., in the SE SE Section 29-17-6, an edge well on the north side of the field, gauged 29,304,000 feet at 710 pounds from 2,450 feet, and Southern Carbon Co.'s No. 1-C Thomason, SW NE Section 14-16-6, made 26,568,000 feet at 550 pounds from 2,450 feet. State Line Oil & Gas Co.'s No. 1-A Boughton, NE NW Section 33-16-6, well down the south edge of production if not a little beyond, had salt water at 2,475 feet, 25 feet below standard depth of Richland wells, which uniformly are finished at 2,450 feet, and will plug back to 2,450 feet for another test. Back in Ouachita Parish, Palmer Corp. will make a deep test for the Monroe "second sand" on No. 4 Cole in the SE NE Section 26-20-4, completed last May as a 5,000,000-foot gasser at 2,176 feet. A test in sandy shale at 2,308 feet was a failure; testing tool didn't open.

De Soto Wildcat

Arkansas-Louisiana Pipe Line Co.'s No. 3 Johnson, Section 1-11-14, De Soto Parish, a wildcat on the SE cor. of the old Spider district, is abandoned as a dry hole at 2,190 feet, the one show it had being a little gas on drill stem test at 2,930-85 feet, in the course of which it made plenty of salt water. Farther west, the old Longstreet and Logansport area is in for two new tests through C. D. Neff's No. 1 Dowling in the SE SE Section 18-13-14, drilling at 150 feet, and No. 1 Ramsey, NE SE Section 33-13-16, a derrick. The latter is going for a test of the stuff at around 2,800 feet that yielded enough oil to make a small commercial well when drilled about six years ago but was passed up in the course of making a deep test. Fuel for Neff's well will come from this well which, when

(Continued on Page 134)

LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated.)

NORTH LOUISIANA

BOSSIER PARISH—BELLEVUE

La. Oil Ref. Corp.'s No. 14-B Bodcaw, 450 ft. W, 330 ft. S, NE cor. SE SW, Sec. 11-19-11 ..... Drlg. 2,400 ft.

H. I. Morgan's No. 11-B Kendrick, 200 ft. N, 600 ft. E, SW cor. NE SW, Sec. 33-19-11 ..... Cmtd. 12½-in. 150 ft; drlg. 520 ft.

BOSSIER PARISH—CARTER

Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor., Lot 17, in Lot 16, Sec. 31-23-11 ..... Hole full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.

Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 36-23-12 ..... Derrick.

The Texas Co.'s No. 1 Pine Wood Lbr. Co., 1,650 ft. S, 360 ft. E, NW cor., Sec. 25-23-12 ..... Swbng. 10 bbls. oil and 7 bbls. S.W. 3,152 ft; W.O.S.R.

Tippett Drlg. Co.'s No. 2 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-13 ..... 300 ft. oil in hole; waiting on power; T.D. 3,130 ft.

BOSSIER PARISH—ELM GROVE

R. O. Roy's No. 1 Hunter, 660 ft. N, 660 ft. E, SW cor., Sec. 24-16-11 ..... 3-ft. sand showing oil 2,536 ft; cmtd. 6⅝-in. 2,546 ft.

BOSSIER PARISH—SLIGO

Palmer Corp.'s No. 1 Johnson, 660 ft. S, 660 ft. W, NE cor., Sec. 24-17-12 ..... O.W.D.D; rig up; T.D. 887 ft; completed Oct. 22, 1929; 23,885,000 ft. gas; cmtd. 6⅝-in. 2,494 ft.

Palmer Corp.'s No. 1 Schnitt, 660 ft. S, 660 ft. E, C, Sec. 14-17-12 ..... O.W.D.D; arranging to deepen 877 ft.

Woodley Pet. Co.'s No. 1 Sheppard, SE SW, Sec. 14-17-12 Location.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16 ..... Location.

Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E, NW cor., Sec. 17-16-16 ..... Location.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 5 Barr, Sec. 30-23-15 ..... Cmtd. 6-in. 1,077 ft; W.O.S.R. 1,121 ft.

CADDO PARISH—OIL CITY

The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16 ..... Location.

The Texas Co.'s No. 74 Levee Board, 1,600 ft. S, 200 ft. W, NE cor., Sec. 33-21-16 ..... Oil sand 1,808-21 ft; cmtd. 8-in. 1,798 ft; T.D. 1,835 ft.

The Texas Co.'s No. 75 Levee Board, 2,450 ft. S, 224 ft. W, NE cor., Sec. 33-21-16 ..... Derrick.

CLAIBORNE PARISH—HOMER

La. Oil Ref. Corp.'s No. 10 Langston, 660 ft. S, 528 ft. E, NW cor. SW SW, Sec. 19-21-7 ..... Junked 661 ft; began second hole Nov. 25; drlg. 150 ft.

CLAIBORNE PARISH—SUGAR CREEK

Triangle Drlg. Co.'s No. 1 Brownfield, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 6-19-5 ..... Cmtd. 9-in. 4,134 ft.

(Continued on Page 102)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated.)

NORTH LOUISIANA

AVOYELLES PARISH

Company, farm and location—	Remarks—
Gas-Con Oil Corp.'s No. 1 Morrow (no check), Sec. 14-2s4e	S.D. sand and shale 4,220 ft.

BIENVILLE PARISH

Carter & Dobbs' No. 1 White, 330 ft. N, 330 ft. W, SE cor. SE SE, Sec. 9-18-6	S.D; W.O. 2,262 ft.
Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8	Began drlg. Nov. 21; cmtd. 10-in. 108 ft; drlg. 450 ft.
W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6	Whipstocked 6⅝-in. 2,176 ft; tested dry; W.O. 3,160 ft.
S. P. Borden's No. 1 Thomas, 330 ft. S, 330 ft. E, NW cor., Sec. 27-16-9	Coring lime 4,250 ft.
Olds & Smith's No. 1 Brice, 330 ft. N, 330 ft. E, SW cor. SE SE, Sec. 15-18-6	Sandy shale showing oil 2,230 ft; cmtd. 6-in. 2,156 ft; bailing csg; no show.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	D.S. test 1,546 ft; S.W; W.O.
Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13	Coring 1,055 ft.

CADDO PARISH

Tex.-La. Prod. Co.'s No. 1 French, 1,270 ft. N, 675 ft. E, SW cor. NW, Sec. 34-22-16	D.S. stuck; T.D. 4,694 ft.
Tex.-La. Prod. Co.'s No. 1 Wall, 2,175 ft. N, 1,980 ft. W, SE cor., Sec. 33-23-16	Drlg. hard lime 4,076 ft.

CALDWELL PARISH

Hudson et al's No. 1 Burton, Sec. 35-12-2e	S.D. 2,230 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMillen, 70 ft. N, 100 ft. W, C, Sec. 26-9-6	Arranging to cmt. 8-in. 2,850 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7	S.D. 2,200 ft.
Baugh et al's No. 1 Alexander, 330 ft. S, 330 ft. W, NE cor., Sec. 27-20-8	S.D. 2,200 ft.
Prairie O. & G. Co.'s No. 1 Shackelford, 331 ft. S, 327 ft. E, NW cor. SE NE, Sec. 30-23-5	Drlg. gumbo 2,088 ft.

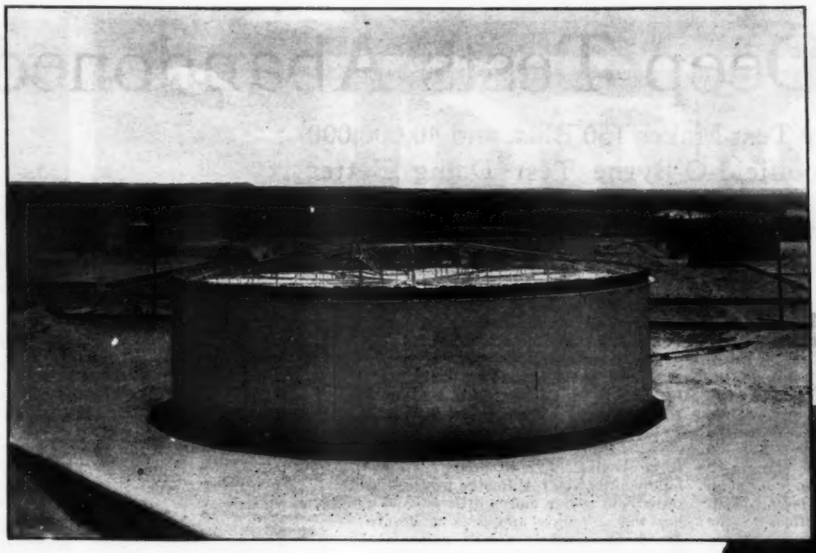
CONCORDIA PARISH

Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e	Drlg. shale 3,600 ft.

DE SOTO PARISH

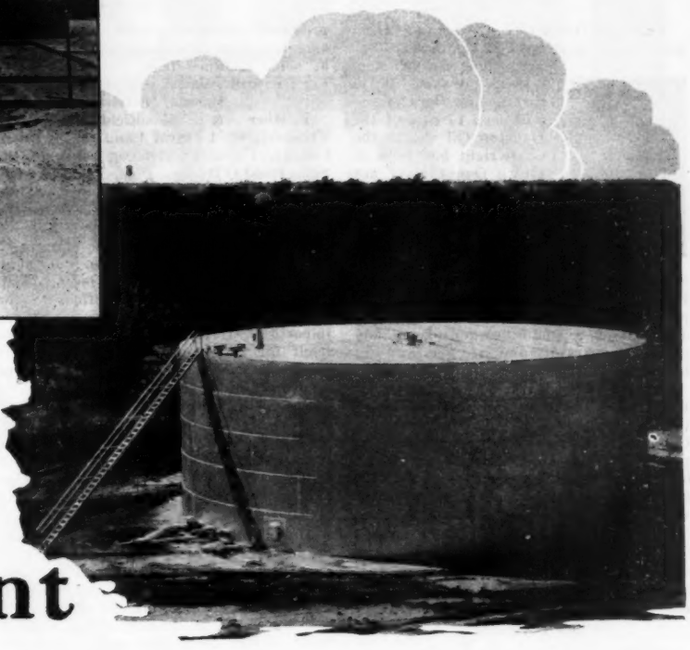
J. M. Bridges, tr.'s No. 1 Cook Land Co., 990 ft. W, 330 ft. S, NE cor., Sec. 16-10-11	Location.
J. W. Clark's No. 1 Tidwell, 250 ft. S, 250 ft. E, NW cor. NW, Sec. 22-13-14	Cored sand showing gas 1,653-57 ft; S.D. waiting for csg.
S. A. Guy's No. 1 Dowling Bros., 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14	S.D; sandy shale 1,354 ft.
Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11	S.D. 1,060 ft.
Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15	S.D. wtr. 1,650 ft.

(Continued on Page 104)



Left: Wiggins Floating Roof on tank containing high sulphur crude, El Paso, Texas.

Below: 25,000-bbl. Horton tank equipped with Wiggins Breather Roof, Houston, Texas.



Tank roofs that pay for themselves and prevent fire loss at no expense

Evaporation savings with Wiggins Roofs repay their cost in a few months . . .

WIGGINS ROOFS for stopping the evaporation of the lightest and most valuable fractions of oil in tankage pay a very attractive return on the investment.

For example: A Wiggins Roof on a 60′ diameter working tank handling 5,000 bbls. of motor fuel gasoline a day will repay its entire cost in 4 months. Or on a 117′ diameter tank handling the same quantity of Mid-Continent crude, the roof pays for itself in 24 months—a return of 50% on the investment. These roofs ride on the surface of the oil at all levels, effectively blanketing it.

Wiggins Breather Roofs offer similar savings on standing storage tanks. They are fastened to the top angle of the shell and flex up and down to accommodate thermal expansion and contraction. On a 117′ diameter tank storing motor fuel gasoline a Breather Roof will repay the difference in cost over an ordinary cone roof in 4 months.

Both types of Wiggins Roofs eliminate fire hazard, in addition, by keeping air out of contact with the oil at all times. They are in service under many conditions and have a good record for preventing fires.

We are glad to furnish evaporation and fire data and quotations on Wiggins Roofs, for old or new tanks. Please address our nearest office.

ANNUAL SAVINGS WITH WIGGINS ROOFS

WORKING TANKS

Bbls. Pumped Daily	Kind of Oil	Cone Roof Tank Loss in Bbls.	Floating Roof Loss in Bbls.	Saving in Dollars
5,000	Gasoline	3,250-4,855	155	$13,000-$19,900
10,000	Gasoline	6,500-9,710	300	26,000- 39,600
5,000	Crude	1,810-2,310	110	5,950- 7,700
10,000	Crude	3,000-4,500	150	9,975- 15,225

STANDING STORAGE

Tank Dia. in ft.	Kind of Oil	Cone Roof Tank Loss in Bbls.	Breather Roof Loss in Bbls.	Saving in Dollars
120	Gasoline	950-1,200	20-50	$4,368
60	Gasoline	200- 300	10-25	966
120	Crude	500- 600	10-25	1,855
90	Crude	300- 350	10-25	1,067

CHICAGO BRIDGE & IRON WORKS

Dallas	3341 Magnolia Bldg.	Cleveland	2204 Midland Bank Bldg.
Houston	1119 Electric Bldg.	New York	3147 Hudson Terminal Bldg.
Tulsa	2406 Exchange Bank Bldg.	Philadelphia	1615 Jefferson Bldg.
Birmingham	1536 Fiftieth St., N.	Boston	1517 Consolidated Gas Bldg.
Atlanta	2154 Rhodes-Haverty Bldg.	San Francisco	1054 Rialto Bldg.
Chicago	2128 Old Colony Bldg.	Seattle	4323 Smith Tower
Detroit	1514 Lafayette Bldg.	Havana, Cuba	Apartado 2507

WIGGINS ROOFS *Stop* EVAPORATION AND FIRE LOSS

Two Live Oak Deep Tests Abandoned

San Patricio County Test Makes 150 Bbls. and 40,000,000 Feet of Gas. Schoolfield-O'Byrne Test Doing Better

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Dec. 1.—High spots of the past week in Southwest Texas include several successes and some disappointments. Both of the mile-deep tests of the Houston Oil Co. in the Cartwright gas field in Live Oak County got too much salt water and not enough oil or gas and are to be abandoned. But the Saxet Oil Co.'s No. 17 Rachel at 4,902 feet in the White Point Field in San Patricio County, first reported a week or more ago as a gas well and making a small amount of oil, has put in separator and is making 150 bbls. of oil with 40,000,000 feet of gas.

Frasher & Schoolfield's No. 1 Duval Land Co., 1½-mile south extension to the Schoolfield-O'Byrne Pool in Duval County, is doing better than first reported. It flowed 600 bbls. of oil in six hours on a three-quarter-inch choke and is pinched in due to lack of storage and waiting for pipe line connection.

North of the Balcones fault, Abercrombie & Harrison's No. 1 Kunz ran out of formation. At 2,185 feet it got hard metamorphic rock, mainly schist, and will quit.

Kerr County

In Kerr County, L. L. Evans' No. 1 Love ranch has the derrick material on the ground and a new rig. It should be ready to go again some time this week. When the well blew out last week and caught fire it attracted a lot of attention to that area and everyone rushed in. The acreage around the well is in strong hands. Evans & Gants have some but the rest is mainly in the hands of major companies. But acreage at some distance from the well has been changing hands rather briskly. It is too far away to get into the same pool but is purchased on the strength of the showing in No. 1 Love and on the theory that if one structure in that territory produces others may also. About $5 an acre has been paid for considerable stuff at some distance from the well. No. 1 Love is still bridged and thus shut in.

Laredo District

Frasher & Schoolfield's (E. R. Thomas) No. 1 Duval Land Co. in Duval County, 1½-mile extension south of the Schoolfield-O'Byrne Pool, flowed 600 bbls. in six hours. It is in Survey 135, and is 2,303 feet deep. Production in the field to the north is at about 2,335-50 feet. The new well had to be shut in to wait for pipe line connection and more storage. It is as good, or better, than any well completed in the field to the north and so has probably opened a very important extension. Since it has shown itself for so much bigger than when it first came in it is the most important immediate thing in that territory.

In the Carolina-Texas Field, George S. Marshall, reported last week as having a 15,000,000-foot gas well at a little below 2,100 feet in his No. 3 Webster, a sand that is producing in other wells, did not stop there but is going down and is below 2,600 feet and drilling.

The Texas Company's No. 5-A Guerra in Starr County which on a drill stem test got some gas and oil at 3,541 to 3,670 feet, set casing and made a test and got disappointment and mainly salt water. It is drilling deeper and is below 3,700 feet. The sand it tested was just right with the producing sand in No. 4-A Guerra brought in a year ago as a small oil well and thus far is still the only producer.

Other happenings in the Laredo district were without particular importance, except that Pal-Mar Oil Co. paid $30,000 for 80 acres in the Escobas Field, part cash and part to come from oil and contracts to drill four wells at once.

Corpus Christi Territory

The most important operation in the Coast area is the Saxet Oil Co.'s No. 17 Rachel which was first estimated at about 20 bbls. of oil with 40,000,000 feet of gas but which has been equipped with a separator and is making 150 bbls. Depth is 4,902 feet and it is the first of a series of deep tests the company has contracted to drill in the White Point Field.

The biggest disappointments were the two deep wells in the Cartwright Field in Live Oak County. No. 1-A Boothe was drilled as a replacement well to No. 1 Boothe which was lost after it had gone a mile deep and looked like the sure opening of new production at 1-mile depth. No. 1-A Boothe at 5,284 feet tested salt water and a little oil and gas but was a failure and it is to be abandoned. It is nearly a mile north of the Cartwright gas field where gas production is at 2,150 feet.

No. 22 Cartwright is in the field and its depth is 5,438 feet and it also tested lots of gas and looked like it was going to make a well but finally when casing was set it turned out to be a salt water well. There may still be a chance for deep production in the Cartwright Field but these tests and some others drilled by the same company and fairly deep rather make the matter look discouraging.

J. E. Walsh has completed his No. 1 Wade in the northeast corner of Jim Wells County for about 75,000,000 feet of gas at 2,976 feet. This was referred to last week as having tested gas on a drill stem test. It is understood the Larcro Gas & Petroleum Co., of which Governor Morgan F. Larson of New Jersey is president, will take a substantial interest in the well and block of acreage. The well showed 1,500 pounds pressure and the owners say has considerable evidence of high gravity gasoline. The well is on a block of 7,000 acres and none of the acreage has been sold off. It is about 7 or 8 miles nearly due south of the Cartwright gas field in Live Oak County. It is understood plans are under consideration for an independent pipe line for the well and Alden Foster and Paul Ruedemann of the engineering firm of Ralph E. Davis, Inc., of New York, were present when the well was brought in. It opens and proves one more gas field for Southwest Texas.

Production

Daily average production in the Southwest Texas area for the week ending November 29, follows:

Bexar	164
Branyon	22
Bruner	15,342
Buchanan	142
Chapman	5,561
Dale	313
Duval	255
Darst Creek	32,636
Kingsville	115
Larremore	20
Luling	9,461
Lytton Springs	753
Manford	255
McMullen	30
Medina	22
Miranda	14,024
Normanna	35
Pettus	8,394
Saxet	38
Somerset	1,463
Yoast	280
Total Southwest Texas	89,325
Week ending November 22	89,581
Decrease	256

Balcones Fault Zone

In the Balcones fault zone counties, at least so far as the south side of the fault is concerned, it has been rather a quiet week. Penn's No. 1 Kosub, in eastern Bexar County, and a little northeast of its discovery Cooksey well, did not get much in the Taylor marl and is going down to the chalk where it will make another test and then regardless of what it gets drill to the Edwards lime. No. 1 Cooksey made about a 50-bbl. well in the Taylor marl.

The other well close to San Antonio that recently created excitement was Wray's No. 1 Burns in northeastern Frio which at 3,100 feet twisted off drill pipe but has since got it fished out and is going again but with nothing further showing.

A new gauge on Darst Creek will be ready in a few days. The gauge was

(Continued on Page 134)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Company, farm and location—	Remarks:
BLANCO COUNTY	
Ben H. Ashe Pet. Corp.'s No. 1 Glasscock, moving in to drill on leases out of the Rodson block north of Blanco City	Location.
Hardy-Sitton's No. 1 McMillan	T. D. 570 ft.; standing.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 460 ft.; standing.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 550 ft.; correction; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 23	T. D. 985 ft.; fishing.
G. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,350 ft. to N line, Sur. No. 94	T. D. 375 ft.; standing.
BASTROP COUNTY	
Pacific Oil & Gas Co.'s No. 1 J. M. Litton, 150 ft. N and W lines of tract	T. D. 2,050 ft.; drlg. in chalk.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 375 ft.; standing.
Champion et al's No. 1 Smith, 2,541 ft. to NW line, 663 ft. to SW line of tract, T. Standifer Sur.	T. D. 2,388 ft.; drlg.
Schimmel & Batts' No. 2 Trigg, 975 ft. S No. 1, James Stewart Sur.	T. D. 1,790 ft.; dry and abnd.
R. S. Bolling's No. 1 McWilliams, 150 ft. from N line, 1,111 ft. from W line of Wm. McWilliams tract, Glasscock Sur.	T. D. 2,125 ft.; drlg.; show oil 2,056-60 ft.
BROOKS COUNTY	
Ed East's No. 3 B. Garcia, 150 ft. from N and W lines of Blk. 5, Share A-1, Las Mastena y Gonzalene grant	Location.
Southern Crude Oil Purchasing Co.'s No. 1 Holbien-Wormser, 900 ft. from E line, 1,000 ft. from S line of Blk. 39, E. P. de Maguellas Sur.	T. D. 5,505 ft.; dry and abnd.
BEE COUNTY	
William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, C Blk. 9 of 11,000-ac. Quincy Subd. of Bee County	T. D. 5,762 ft.; shut down.
Hurlbut et al's No. 1 Mrs. D. Chestnut	T. D. 5,010 ft.; shut down.
Walter Rawlins' No. 1 P. L. Campbell, C B.&B. Sur.	T. D. 4,505 ft.; dry and abnd.
E. S. Price's No. 1 Weiss, 200 ft. each way out of NW cor. of B.&B. Sur.	T. D. 4,423 ft.; preparing to swab.

(Continued on Page 128)

SOUTHWEST TEXAS PROVEN AREAS

Company, farm and location—	Remarks:
DOBROWOLSKI POOL—BEXAR COUNTY	
Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
F. H. Eckert's No. 1 Drobrowolski, 400 ft. from W line, 150 ft. from S line of lease, Sur. No. 53	Location.
W. R. Swearingen's No. 2 Halberdier, 300 ft. SE of No. 1 J. Perege Sur.	T. D. 460 ft.; standing.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.
DARST CREEK FIELD—GUADALUPE COUNTY	
Gulf Prod. Co.'s No. 5 Tadlock, 300 ft. S of No. 3, 150 ft. from W line	T. D. 2,640 ft.; drlg.
Gulf Production Co.'s No. 6 Tadlock, 150 ft. N line of lease, 300 ft. E of No. 4	Location.
Gulf Prod. Co.'s No. 15 Dix-McKean, 450 ft. out of NW cor. of lease	Location.
Gulf Prod. Co.'s No. 10 Posey-Baker, direct offset to No. 4 Annie Knodel of Magnolia Pet. Co.	Location.
Humble Oil & Ref. Co.'s No. 1-B Sue Denman, 150 ft. from the N and W lines of lease, in the extreme NE cor. of the J. C. Darst Sur.	T. D. 2,627 ft.; drlg.
Louisiana Oil & Refining Co.'s No. 5 Dix-McKean, 450 ft. SW line of lease, 385 ft. S of No. 6	T. D. 100 ft.; drlg.
Louisiana Oil & Refining Co.'s No. 6 Dix-McKean, 450 ft. SW line and 980 ft. NW line of lease	T. D. 1,200 ft.; drlg.
Magnolia Petroleum Co.'s No. 15 Thomas-Dix, offset to No. 4 Klein	T. D. 20 ft.; set surface csg.
Magnolia Petroleum Co.'s No. 5 Klein	Location.
Magnolia Petroleum Co.'s No. 4 Klein, 300 ft. W of No. 1, 150 ft. from NW line of lease, Robinson Sur.	T. D. 1,634 ft.; preparing to pump.
Magnolia Petroleum Co.'s No. 6 Rand Miller, 150 ft. from NW line, 450 ft. from SW line, Alexander Sur.	T. D. 2,627 ft.; estimated at 400 bbls.
Magnolia Petroleum Co.'s No. 7 Rand Miller	Location.
The Texas Company's No. 6 Anderson, 300 ft. W of No. 1, 613 ft. from S line	T. D. 2,584 ft.; initial production 360 bbls. daily.
The Texas Company's No. 6-A Knoblock, 750 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur.	T. D. 2,477 ft.; drlg.
The Texas Company's No. 7-A Knoblock, 1,325 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur.	T. D. 2,528 ft.; completed; flowing 360 bbls.

(Continued on Page 130)

IDEAL
DRAW WORKS BRAKE
TYPE "K"

Designed for IDEAL Draw Works 34-26 and 7½-RB but is also adaptable to other types of Draw Works

Descriptive Bulletin
No. 91
Sent on Request

THE
NATIONAL SUPPLY
COMPANIES

Subsalt Possibilities Are Promising

Two More Good Wells Completed at Barbers Hill After Drilling Through Ledges of Cap Rock and Salt. May Prove Large Area

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Dec. 1.—The extensive possibilities of the prolific subsalt production around the edges of the Barbers Hill Dome were indicated further the past week with the completion of two more good wells in sands found after drilling through ledges of cap rock and salt. Yount Lee Oil Co.'s No. 16, Chambers County, south side of the dome, was brought in flowing 1,320 bbls. of pipe line oil daily on a half-inch choke with 70 feet of screen set at 4,733 feet. Humphreys Corp.'s No. 8-B Kirby, on the northeast flank, which late Saturday had not entirely cleaned itself, came in flowing 90 bbls. of oil, 10 per cent wash water, in the first hour on a five-eighths-inch choke from sand at 5,194-5,295 feet.

Both these wells are located on the extreme inside of the circle of production and were drilled up on the previously outlined dome area with a view to drilling through cap rock and salt. They are two of a series of wells which have been drilled and are drilling in the new development which has marked late operations at Barbers Hill and which is spreading to other domes. Humphreys' Kirby well drilled through 920 feet of salt from 1,631 to 2,551 feet before going back into formation.

Half Dozen Tests

Subsalt wells around the edges of Barbers Hill are expected to figure very conspicuously in Gulf Coast Field operations within the next few months and are expected to prove up an extensive amount of territory around the dome which in the past has been condemned by tests hitting cap or salt. Virtually all new work at Barbers Hill is being done up on the edges of the cap rock area in line with the new "overhang" theory of salt dome formation and at present there are more than a half dozen additional tests on various sides of the dome which are back in formation after having passed through thick masses of cap rock and salt.

Among these are Humphreys Corp.'s No. 6-A Barber, northwest side of the dome and the first test to prove the overhang theory on that sector of the dome. The protrusion of cap rock and salt now has been indicated on all sides of the dome except the extreme southwest, where drilling so far has been entirely off the edge of the dome. No. 6-A Barber is of particular interest at this time because of the oil sand which it is in at 5,281-5,300 feet and which will be tested, casing having been set. This test topped salt at 3,558 feet, going out of it around 4,200 feet. Compared to the sand found in the other two deep wells on the northwest, Humphreys' No. 9-A Kirby (discovery well) and No. 1-F Barber, which No. 6-A Barber offsets to the south, the sand in the No. 6-A is high and indicates what is to be found in tapping the sands closer up to the main dome and underlying the overhang. The other two wells were in sand at 6,200-6,400 feet.

Since drilling through salt in No. 6-A Barber, which is a southward extension test on the northwest flank, No. 10-A Kirby, approximately 1,000 feet to the northeastward around the dome from the discovery well, also has drilled through salt from 3,120-3,248 feet and late in the week was in formation at 3,490 feet.

In addition to the two wells previously mentioned two other completions were reported at Barbers Hill. These were McAlbert Oil Co.'s No. 4 Woodward, a former producer in sand at 5,202 feet, which was deepened to 5,316 feet for 830 bbls. on a three-eighths-inch choke with 50 feet of screen in the hole, and Humphreys Corp.'s No. 1-B Barber on the north side, which was abandoned at a total depth of 6,793 feet with drill stem stuck. This test, an offset to the same company's No. 1 Morgan, discovery well on that side, also had drilled through salt into formation and was located further up on the dome than the discovery well.

At Sulphur Dome

At Sulphur Dome, Calcasieu Parish, Louisiana, Union Sulphur Co. has given up its attempt to drill through salt in its No. 764 fee after going 2,020 feet into the dome. This test topped salt at 4,453 feet and drilled to a total depth of 6,473 feet. The amount of salt exceeds that of 1,647 feet drilled through by Mills Bennett Production Co.'s No. 3 E. W. Barber on the north flank of Barbers Hill. The Sulphur well has been plugged to a sand passed up at 4,278 feet.

Caillou Island Dome

At the Caillou Island Dome in the coastal marsh land of southern Terrebonne Parish, Louisiana, The Texas Company is making an experimental test in its No. 5 State by attempting to drill through salt on the edge of that dome. That test late in the week had drilled 853 feet into the salt topped at 4,092 feet. It is the belief of The Texas Company that a ledge protrudes around the edge of that dome similar to that found at Barbers Hill, Allen and a few others.

Moss Bluff Dome

As this is written one of the most interesting wildcats on the Gulf Coast is Shell Petroleum Corp.'s No. 2 Herff on the south side of the Moss Bluff Dome which is in a good looking oil sand at 5,758-5,804 feet and which is setting screen to test. Three other producers at Moss Bluff have been on the extreme east side of the dome in Humble Oil & Refining Co.'s No. 6 Sterling and Gulf Production Co.'s Nos. 1 and 2 McFaddin. Shell's test is several thousand feet to the southwest around the dome and on the Chambers County side of Liberty-Chambers County line.

Empire Gas & Fuel Co.'s No. 1 Boker, wildcat gas well at Citrus Grove, J. J. Criswell Survey, Matagorda County, which blew out 10 days ago from a sand at a total depth of 6,252 feet and which was successfully killed the past week, is standing pending moving in of material to complete the well and it will be several days before the importance of the discovery can be determined definitely.

Completions

Among completions of the week was Mills Bennett Production Co.'s No. 1 Poole, southeast side of Allen Dome, which originally was completed early last October flowing 1,600 bbls. daily choked in from a sand at 4,374 feet found after drilling 730 feet through an overhanging ledge of cap rock. The well at that time went to water and since has been worked over and screen reset. It came in flowing an estimated 1,100 bbls. daily with considerable fresh water. Late in the week oil production had dropped to 500 bbls.

At Refugio in the lower coastal country, Mission Drilling Co.'s No. 1 O'Brien, completed last May in the 5,400-foot sand at 5,471 feet for 300 bbls., has been deepened to the 6,400-foot sand at 6,440-49 feet, where it has been completed flowing 677 bbls. of 42 gravity pipe line oil on chokes. Pressure is 1,400 pounds. This well makes a slight eastern extension of the 6,400-foot horizon. Royal Oil Co.'s No. 1 Hornburg, Block 32, deepened from the 3,700-foot sand to 5,420-47 feet, is flowing 600 bbls. of fluid, 50 per cent water, choked. Union Producing Co.'s No. 3 Fox was a completion in the 3,700-foot horizon at 3,675 feet, making a small amount of fluid. Moody-Seagraves Producing Co.'s No. 1 Rooke, deepened to 6,504 feet, was dry and abandoned.

East Hackberry Field

The East Hackberry Field of Cameron Parish, where a series of good wells have been completed in the past two months in a new drilling development there, figured the past week with two additional wells, Calcasieu Oil Co.'s No. 1 State and No. 22 Watkins. The former set one joint of screen at 4,084 feet and flowed an estimated 2,000 bbls. daily on a half-inch choke, pressure 310 pounds. No. 22 Watkins, with two joints of screen at 2,855 feet, flowed 1,310 bbls. on a half-inch choke, 250 pounds pressure.

Humble Oil & Refining Co. has abandoned as dry its No. 1 Delaware Fur Co., Section 2-16s-23e, 3 miles northwest of Lafitte, Jefferson Parish, Louisiana. This test, drilled to a total depth of 7,629 feet, was the first test on what is known as the Barataria geophysical dome prospect. No new location has been made.

Production

Daily average production in the Gulf Coast area for the week ending November 29, follows:

SOUTHEAST TEXAS	
Allen	230
Barbers Hill	22,231
Batson	1,095
Big Creek	3,348
Blue Ridge	1,612
Brenham	153
Boling	894
Clay Creek	1,228
Damon Mound	695
DeWalt	12,019
Esperson (Sheeks)	2,822
Fannett	547
Goose Creek	4,343
Hankamer	1,808
High Island	617
Hull	7,902
Humble	13,540
Jasper County	14
Lost Lake	396
Markham	294
Moss Bluff	126
Mykawa	286
Nash	253
North Dayton	970
Orange	1,998
Orchard	2,221
Pierce Junction	9,465
Port Neches	1,500
Raccoon Bend	8,812
Refugio	27,142
Saratoga	1,290
Sour Lake	2,155
South Liberty	2,900
Spindletop	14,300
West Columbia	5,260
Total Southeast Texas	154,346
Week ending November 22	152,938
Increase	1,438

SOUTH LOUISIANA	
Anse La Butte	32
Bayou Blue	247
Bayou Bouillon	154
Black Bayou	1,205
Edgerly	387
Jennings	2,078
Hackberry	3,686
Lake Barre	2,229
Lake Pelto	82
Lockport	4,279
Port Barre	2,309
Sorrento	65
Starks	670
Sulphur	2,800
Sweet Lake	1,154
Vinton	5,525
Welsh	121
White Castle	1,061
Total South Louisiana	28,084
Week ending November 22	27,601
Increase	483
Total Gulf Coast	182,469
Week ending November 22	180,539
Increase	1,921

GULF COAST FIELDS AND WILDCATS

Week Ending November 29

All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 4 Barber, north	Drlg. salt 1,589 ft.
Mills Bennett Prod. Co.'s No. 10 Barrow (workover)	Lime 5,226 ft.; reaming.
Mills Bennett Prod. Co.'s No. 3 Gulf Fisher, south	Drlg. salt 1,948 ft.
Humble Oil & Ref. Co.'s No. 6 fee, west	Cmtd. csg. and screen 6,369 ft.
Humphreys Corp.'s No. 1-B Barber, north	Total depth 6,793 ft.; abandoned.
Humphreys Corp.'s No. 2-B Barber, north	Anhydrite 1,141-84 ft.; drill stem stuck.
Humphreys Corp.'s No. 6-A Barber, northwest	Oil sand 5,281-5,300 ft.; cmtd. csg.
Humphreys Corp.'s No. 1 Louise Fitzgerald, north	Drlg. sand and lime 1,278 ft.
Humphreys Corp.'s No. 1 Morgan (workover)	Total depth 6,404 ft.; pulling liner.
Humphreys Corp.'s No. 8-B Kirby (workover)	Oil sand 5,194-5,295 ft.; comp. flowing 1,800 bbls. on ¾-in. choke.
Humphreys Corp.'s No. 10-A Kirby (workover)	Drlg. hard sand and lime 3,490 ft.
Humphreys Corp.'s No. 1 Winfree, west	Coring sand 4,994 ft.
McAlbert Oil Co.'s No. 2-A Riggins, southeast	Rigging up.
McAlbert Oil Co.'s No. 4 Woodward (workover)	Set 50 ft. screen 5,316 ft.; comp. flowing 830 bbls.
Republic Prod. Co.'s No. 3 Kirby (workover)	Swabbing 6,700 ft.
Sinclair Oil & Gas Co.'s No. 2 Smith, west	Sandy shale showing oil 5,604 ft.
Sun Oil Co.'s No. 5 Chambers (workover)	Pulling liner 5,429 ft.
Sun Oil Co.'s No. 7 Chambers, south	Drlg. salt 3,053 ft.
Sun Oil Co.'s No. 12 Wilburn fee, east	Shale 4,987 ft.; set 9 jts. screen.
Sun Oil Co.'s No. 13 Wilburn fee, east	Waiting on orders.
The Texas Company's No. 1 Williams, southwest	Total depth 6,523 ft.; reaming.
The Texas Company's No. 1 Winfree, west	Drlg. sticky shale 4,801 ft.
Yount Lee Oil Co.'s No. 1 Hindman, southwest	Drlg. hard sand 6,413 ft.
Yount Lee Oil Co.'s No. 16 Chambers, south	Sand and shale 4,670-4,733 ft.; set screen; comp. flowing 1,320 bbls. pipe line oil.
Yount Lee Oil Co.'s No. 17 Chambers, south	Rigging up.
Yount Lee Oil Co.'s No. 3 Fisher, southwest	Total depth 7,024 ft.; set 5 jts. screen 6,676 ft.
Yount Lee Oil Co.'s No. 6 Phillips, east	Waiting on orders.
Yount Lee Oil Co.'s No. 1 Winfree, west	Coring sand 3,381 ft.

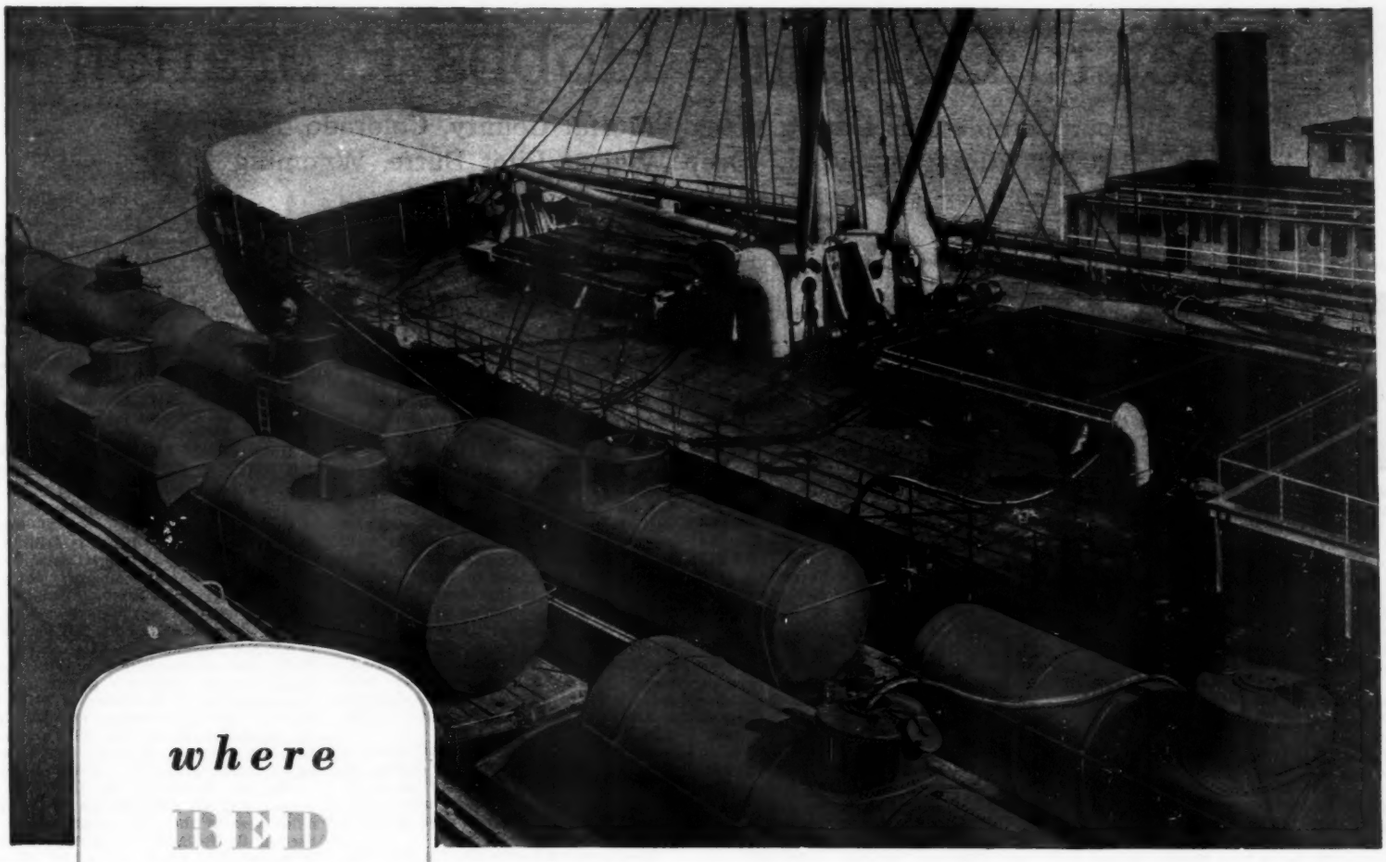
RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 3-B Hardy	Drlg. sand 114 ft.
Humble & Valley's No. 9 Mueller	Derrick.
Humble & Valley's No. 7 Payne	Derrick.
Humble & Valley's No. 8 Payne	Derrick.
Humble & Valley's No. 6 Saunders	Derrick.
Humble & Valley's No. 3 Sherrod	Derrick.
Humble & Valley's No. 6 Woodley	Derrick.
Humble & Valley's No. 7 Woodley	Derrick.
Humble & Valley's No. 8 Woodley	Derrick.
Humble & Valley's No. 9 Woodley	Derrick.
Humble & Valley's No. 10 Woodley	Swabbing 3,484 ft.; set screen.

HUMBLE—HARRIS COUNTY

Cullen West's No. 5 Lee, south	Shale 4,122; cmtd. csg. to test.
John Deering's No. 2 Bennett	Drlg. sand and shale 4,069 ft.
P. S. Griffith's No. 1 fee	Drlg. hard sandy shale 3,269 ft.
LaRue, trustee's No. 1 Crane, northwest	Derrick.
M. LaRue's No. 1 Tuffly, northwest	Gumbo 1,405 ft.; shut down.
Southern Coastal Oil Co.'s No. 2 Perkins	Drlg. gumbo 2,195 ft.

(Continued on Page 126)



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Meet to Continue Hobbs Proration

Four Completions During Week. Moffat County, Colorado, Has 35,000,000-Foot Gas Well. Deep Well at Pilot Butte, Wyoming

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Dec. 1.—Operators in the Hobbs Pool in New Mexico will meet shortly with the executive committee and state officials to approve for another six months the proration agreement which expires in January. Four completions were reported in that field the past week, including three in the center of Section 31-18-38 which prove up a square mile of territory on the southwestern side. The past week's completions, including the Tidal Oil Co.'s No. 4 Grimes for 19,442 bbls., proves the field to be at least 2 miles wide. Prospects are favorable for 15 to 20 wells being started in the Eunice area at an early date. The Murchison Oil Co. has a gas well in San Juan County and the Craven interests in McKinley County are planning a pipe line and refinery project.

Colorado operations are shutting down in the face of unfavorable weather. The Platte Valley Petroleum Co. has ironed out some of its internal differences and is making progress towards the development of its holdings in Weld County. The Midwest Refining Co. completed its Bell Rock Dome discovery in Moffat County as a 35,000,000-foot gas well.

The Resolute Oil Co.'s discovery on Badger Basin, in Park County, Wyoming, reveals some interesting geological facts, the formations dipping 8,250 feet in 22 miles. Location has been made by the Midwest Refining Co. for a second well on the Midway Dome and that company has abandoned its Wagonhound test in Hot Springs County. The Kinney-Coastal Oil Co.'s deep test at Pilot Butte, which opened a new gas field, gauged better than 80,000,000 feet of gas.

NEW MEXICO

Hobbs Pool—Lea County

The six months' agreement between the operators in the Hobbs Pool and the State of New Mexico for the proration of production in that field, which became effective as of July 10, 1930, will expire early in January. James W. Veasey, of Tulsa, chairman of the executive committee in charge of the proration, has advised the operators and the proper state officials that a meeting will be held shortly to consider several matters to be presented and to approve the renewal of the proration agreement for another six months. The date for the meeting has not yet been announced. The indications at this time are that the present arrangement will be continued without any serious changes in the plan. Umpire C. G. Staley, apparently, has handled the details of the agreement to the satisfaction of all concerned and the conditions which brought about the decision to put the field on a proration basis are about the same now as when the agreement was signed. Dr. Austin D. Crile, who was state land commissioner at the time proration went into effect, will be succeeded on January 1 by James F. Hinkle, former governor. Mr. Hinkle is quoted in an Associated Press dispatch from Santa Fe as saying he was not prepared to discuss his policies as head of that department in regard to the problems of the oil industry, but added that he intended to take the office with an open mind and meet the issues as they arrive.

Umpire Staley's report as of November 16 showed a total allowable production from July 10 to November 15, inclusive, under the agreement, of 4,261,729 bbls. and that total runs during the period were 4,204,551 bbls. The net shortage was 57,884 bbls.

Four Completions

Four completions were reported in the Hobbs Pool this week, of which three were near the center of Section 31-18-38, on the southwestern side of the field where about a square mile of territory has been added to the productive area. The first of the four offsets in the center of Section 31 to be completed was reported last week, Skelly Oil Co.'s No. 2 Fowler, SE cor. NW of the section which was given a potential of 3,758 bbls. Vacuum Oil Co.'s No. 1 Berry, NE cor. SW, Section 31-18-38, an offset on the south to the Skelly well, was somewhat of a disappointment. It gauged 1,685 bbls. through the 2-inch tubing and 922 bbls. open flow at a total depth of 4,190 feet. The gas was estimated at 1,000,000 feet. It did not go quite so deep as the Skelly well which was drilled to 4,215 feet. The other two wells in this area which are offsets on the east, were completed as follows:

Empire Gas & Fuel Co.'s No. 3 Fowler, SW cor. NE, Section 31-18-38, was given a potential of 5,994 bbls. of oil and 6,000,000 feet of gas. The pay was at 4,085-4,212 feet. The top of the anhydrite was at 1,485 feet and the top of the brown lime at 2,795 feet. The elevation is 3,642 feet.

Shell Petroleum Corp.'s No. 2 Berry, NW cor. SE, Section 31-18-38, was rated at 2,170 bbls. through the tubing and 1,749 bbls. through the tubing and casing. The gas was estimated at 1,946,000 feet. The pay was at 4,040-4,210 feet and the 3-inch tubing was run to 4,191 feet. The top of the anhydrite was at 1,510 feet and the brown lime at 2,830 feet. The elevation is 3,640 feet.

Tidal Oil Co.'s No. 4 Grimes, SE cor. NE, Section 29-18-38, in the northeastern part of the field, was rated by the company at 19,442 bbls. of oil and 16,640,000 feet of gas from a total depth of 4,194 feet. It made 405 bbls. in 30 minutes. The distance between the Tidal well and the group of offsets in the center of Section 31 is 2 miles in a northeast-southwest direction, while the trend of the pool is in a northwest-southeast direction. Earlier predictions that the pool would be only a mile wide are now proven to be too conservative.

Drilling Operations

Routine drilling operations include the following:

Cecil Bordages' No. 1 Hughes, C S half, Section 27-19-38, 2 miles south of the nearest producer, is bottomed at 4,012 feet and drilling out cement to test. This operation was started in 1927 and was the pioneer well in that district, but has been held back by numerous troubles. It had collapsed pipe at 2,800 feet which delayed it for a long time. This has been swedged and 8¼-inch is cemented on bottom. Several major companies have spreads around the well. The elevation is 3,585 feet and it cut the salt at 1,680-2,735 feet.

Continental Oil Co.'s No. 1-C State, C NW SE, Section 5-19-38, is drilling at 3,970 feet. It had a show of gas at 2,824 feet and a show of oil and gas at 3,198-3,205 feet and an oil sand at 3,580-3,635 feet.

Empire Gas & Fuel Co.'s No. 3 Hardin, SE NE NW, Section 19-18-38, is bottomed at 4,220 feet in lime with 3-inch tubing at 4,190 feet and is preparing to test.

Humble Oil & Refining Co.'s No. 2-A State, SE cor., Section 25-18-37, is standing at 4,110 feet with 7-inch cemented. Same company's No. 3-A State, C NW SE, Section 25-18-37, half a mile ahead of production on the western side, is drilling at 3,927 feet in lime and anhydrite. It topped brown lime at 2,898 feet and had first gas at 2,918 feet and first oil at 3,330 feet. Elevation is 3,665 feet.

Landreth Production Co.'s No. 1-C State, NE cor. NW, Section 6-19-38, is bottomed at 202 feet and is rigging up rotary.

Mid-Continent Oil Co.'s No. 1 Fowler, NE NW NW, Section 31-18-38, is drilling at 3,994 feet in lime.

Midwest's Operations

Midwest Refining Co.'s No. 26 State, C SE SW, Section 4-19-38, is drilling at 4,051 feet in lime. It topped dolomite at 4,035 feet. Same company's No. 11 Thorpe, C NE NW, Section 10-19-38, cemented 10¾-inch at 1,587 feet and is rigging up rotary, and its No. 11 State, C NE NW, Section 9-19-38, is drilling at 2,040 feet in anhydrite and salt. Last named topped anhydrite at 1,515 feet. Midwest's No. 25 McKinley, C SE NW, Section 5-19-38, is drilling at 3,360 feet in anhydrite, and its No. 29 Turner, C SW SW, Section 34-18-38, is bottomed at 3,285 feet in anhydrite and is bailing.

National Securities Oil Co.'s No. 1 Linam, NE SE SW, Section 33-18-37, 4 miles west of the wells in the center of Section 31-18-38, the nearest producers, is bottomed at 1,651 feet, where 10-inch was cemented, and is rigging up cable tools. It topped anhydrite at 1,580 feet and elevation is 3,706 feet. The anhydrite was topped at 2,126 feet above sea level, which compares with top of anhydrite 2,130 feet above sea level in Shell Petroleum Co.'s No. 2 Berry, 4 miles to the east.

Ohio Oil Co.'s No. 4 State, SW cor., Section 30-18-38, is drilling at 3,985 feet in lime.

Sun Oil Co.'s No. 4 McKinley, C SW NE, Section 5-19-38, is drilling at 2,455 feet in salt.

The Texas Company's No. 3-C State, C SW NE, Section 25-18-37, is drilling at 3,423 feet in anhydrite and had a show of gas at 2,900 feet and a show of oil at 3,418 feet.

Tidal Oil Co.'s No. 5 Grimes, NW SE NE, Section 29-18-38, spudded on November 15 and is drilling in gravel at 50 feet.

Eunice Area—Lea County

The Eunice area, southwest of the Hobbs Pool, stands a good chance of going into first place in Lea County on the basis of the number of active drilling wells before the end of the year. Between 15 and 20 locations are in prospect. Wells so far completed in that area have not revealed a pool comparable with Hobbs, but it will be recalled that the first wells in the Hobbs Pool averaged around only 500 bbls. each and it was some time after the discovery before the gusher production was found 3 miles to the northwest. Whether the Eunice area will repeat is anybody's guess. An application has been made to the state land commissioner for a commercial lease for a townsite on the SW SW, Section 15; E half SE, Section 16; and NW NW, Section 22-21-36, by B. V. Culp, of Lovington. Doctor Crile is quoted as saying it will be issued at $2.50 per acre. Another townsite lease is in prospect, but application for it has not yet been made.

George F. Getty, Inc.'s No. 1 State, NE cor., Section 19-21-36, one of the recent completions, averaged 448 bbls. the past seven days, compared with 450 bbls. in the preceding week. Continental Oil Co.'s No. 1-A Lockhart, NE cor., Section 18-21-36, is rigging up, and its No. 2 A. E. Meyers, SE cor. NW, Section 17-21-36, is drilling at 1,420 feet in salt. Shell

(Continued on Page 117)

IMPORTANT NEW JOINT TEST SPUDDED IN SOUTHERN ALBERTA

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Nov. 29.—In southern Alberta an important new joint test has been spudded in by the Imperial Oil, Ltd. and Texas Oil Co. of Canada, on the Lethbridge structure, about 8 miles west of Lethbridge. Location is in SW Section 22-9-22w4, on acreage secured from Lethbridge Petroleum & Refining Co. It is being jointly financed by Texas Oil Co. of Canada, which subleased the acreage, and Imperial Oil, Ltd., which controls a large block on the structure close to the new test. This is the first drilling undertaken in Canada by the Texas company. Under the working agreement with the Texas company, Imperial Oil, Ltd. will handle the drilling. Standard tools are being used. The test started with 24-inch hole, and the operators are planning to continue drilling through the winter. A pipe line connecting with the Canadian Western Natural Gas Co.'s main line has been laid to provide fuel for the drilling.

In the South Turner Valley, Mayland Oil Co.'s No. 3, Section 17-19-2w5, is 350 feet in the lime at 6,180 feet and making a production test. Royalite Oil Co.'s No. 24, LSD 3, Section 29-19-2w5, is standing cemented at 5,267 feet, and will shortly start drilling into production.

In South Turner Valley, Miracle Oils' No. 2, LSD 16, Section 5-19-2w5, is reported rigging up to spud in about December 1. Miracle's No. 1, LSD 11, Section 4-19-2w5, is maintaining a good production, averaging about 340 bbls. a day.

East Crest Oil Co.'s No. 3, LSD 4, Section 16-19-2w5, is reported spudding in.

Central Turner Valley

In Section 1-20-3w5, Sioux City Oils' No. 1, LSD 10, is testing at 6,185 feet after drilling 1,800 feet into the lime. The well has about 3,000,000 feet of wet gas and various back pressures are being tried to secure maximum recovery. Okalta Oils' No. 2, LSD 8, is drilling at 5,037 feet, about 257 feet in the lime, with a fair commercial production indicated. No. 1 is making 140 bbls. a day and No. 3 about 20 bbls.

In Section 13-20-3w5, Spooner Oils' No. 4, LSD 14, is drilling 144 feet in the lime at 5,213 feet with good shows of wet gas.

On the Moose Dome, Moose Oils' No. 1, LSD 16, Section 29-22-6w5, is sidetracking tools frozen in the hole at 2,797 feet. On the Herron structure, Herron Petroleums' No. 1, LSD 3, Section 13-22-6w5, is preparing to resume after setting 8-inch casing 450 feet in the lime at 3,300 feet. The test is in a dark lime with heavy impregnation of oil and some gas.

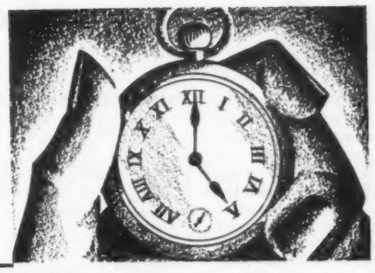
On the Spring Coulee structure, southern Alberta, Alberta Pacific Consolidated Oils' No. 1, Section 15-4-23w4, is drilling in the Colorado shales at 4,361 feet. Some gas sands are looked for in the next few hundred feet, but commercial production is not anticipated till between 5,000 and 5,500 feet.

Red Coulee Field

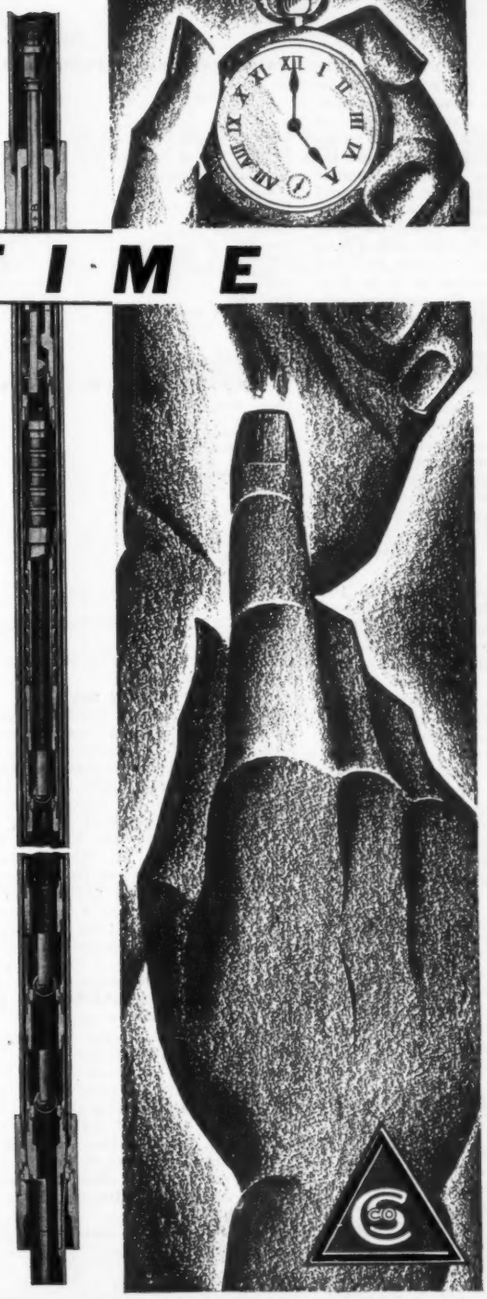
On the Montana end of the international Red Coulee structure, Monalta Oil Co.'s No. 2 Buckley, Section 1-37-4w,

(Continued on Page 117)

D+B
SIMPLEX
INSERT PUMPS



SAVE TIME



A time saver for the production crew as it is not necessary to pull the tubing when changing pumps or making repairs. When the last stand of rods is pulled, the entire working parts of the pump are on the derrick floor ready for inspection or replacements. When the rods are again run in, the working barrel automatically locks into its working position, and the total time required is only that of pulling and running in the sucker rod string.

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Belridge Field Looks More Important

Formations Are Conducive to Fast Footage. Playa Del Rey Expected to Go Higher. Weed Patch Drilling Resumed

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 29.—The production situation in California is being minutely scrutinized by executives of all major companies in an effort to determine the best policy to pursue during the next several months and developments within the next 15 days may throw some light on just how the situation is to be handled. The principal subject under discussion at present involves disposition of current production at Playa Del Rey and the possibility of effecting a more drastic curtailment program to make way for additional production to be developed at Kettleman Hills and in the Lost Hills-Belridge area in the near future. It is a foregone conclusion that Pacific Coast refiners cannot hope to go on indefinitely absorbing surplus production at present prices, especially since price recessions along the Atlantic Seaboard have made it obligatory for California operators to reduce intercoastal shipments.

Intense competition all along the Pacific Coast is expected to result in a downward revision in crude and refined oil prices in the near future. If this becomes a reality, it should not have any effect on state-wide curtailment. It is absolutely necessary that state production be kept to a minimum or prices will go still lower as it is a physical impossibility for major refiners to cope with increased production. Curtailment must go on irrespective of any price reduction made if any semblance of a price schedule is to exist. In addition to present curtailment, the industry must effect a still more drastic reduction to keep supply and demand in as favorable a position as possible.

Increased production of extremely high gravity oil at Kettleman Hills and in the Lost Hills-Belridge Fields is causing refiners considerable anxiety because it does not require much of this high gravity oil to wreck the refined oil market. This is important because if the bottom drops out of the refined oil market crude prices must of necessity also be reduced. The North Belridge Field looks like it will become a factor of much greater importance than many anticipate. The Richfield Oil Co.'s test in this field is looking exceptionally good and this well is expected to register a much larger production than the Belridge Oil Co.'s deep zone discovery which, at last reports, was producing 3,765 bbls. of high gravity oil and 50,000,000 feet of gas. These two wells are approximately 7,500 feet apart horizontally, and, although the Richfield Oil Co.'s project is somewhat deeper stratigraphically, the difference represents only a normal variation of approximately 5 degrees. The Texas Company is already drilling in an offset to this well and field reports indicate that if the Richfield Oil Co. secures substantial production in its first test it will start several more immediately. These wells will require several offsets, and, although every attempt will be made to keep production down to a minimum, this field is going to cause operators considerable difficulty. In addition to the Richfield Oil Co.'s test, which is standing cemented, and two new wells being started by the Belridge Oil Co., the Ohio, Reward, Standard, Texas and Union are all making hole in wells which appear definitely assured of production. All wells now drilling should, barring the development of mechanical trouble, be completed on or before April 1, as the formation in this field is especially conducive to fast footage.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	997,250
Fuel oil	.....	.....	.....	.....	71,960	468,825
Diesel and gas oil	77,645	11,092	.....	.....	3,293,683	2,501,340
Gasoline	325,112	46,445	275,864	39,409	17,758,584	18,822,753
Kerosene	.....	.....	.....	.....	.....	49,750
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	188,750	26,964	270,511	38,644	14,224,306	23,984,084
Fuel oil	570,080	81,440	428,656	61,237	16,950,402	17,595,377
Diesel and fuel oil	29,207	4,172	9,953	1,422	1,517,896	1,143,828
Gasoline	127,163	18,166	273,814	39,116	11,440,367	9,879,030
Kerosene	.....	.....	.....	.....	151,436	70,286
Exports—						
Crude oil	199,867	28,552	.....	.....	6,354,116	5,498,386
Fuel oil	247,060	35,294	286,569	40,938	15,848,781	16,816,680
Diesel and gas oil	33,004	4,715	38,804	5,543	3,971,638	2,433,578
Gasoline	162,512	23,359	153,032	21,862	14,250,685	10,954,651
Kerosene	.....	.....	.....	.....	3,145,249	2,983,259
Lubricants	.....	.....	18,050	2,579	45,484	.....

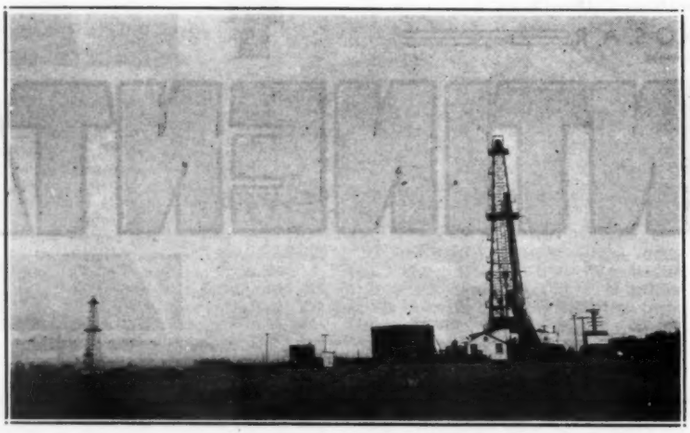
TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	279,088	.....
Gasoline	.....	.....	.....	.....	1,080,671	2,209,240
Lubricants	.....	.....	.....	.....	27,796	138,706
Coastwise—						
Fuel oil	64,310	9,187	144,118	20,588	3,097,770	2,798,589
Diesel and gas oil	32,960	4,709	.....	.....	343,182	360,538
Gasoline	19,632	2,805	56,003	8,000	3,882,578	4,673,378
Kerosene	2,511	359	4,977	711	208,548	191,403
Exports—						
Crude oil	.....	.....	.....	.....	59,993	121,603
Fuel oil	126,730	18,104	.....	.....	993,026	841,631
Diesel and gas oil	.....	.....	.....	.....	457,589	393,132
Gasoline	.....	.....	74,730	10,674	3,645,846	4,985,677
Kerosene	.....	.....	.....	.....	570,271	528,060
Lubricants	.....	.....	.....	.....	33,579	29,795

Playa Del Rey

The Playa Del Rey Field of Los Angeles Basin showed a further increase in production and is expected to go still higher as swabbing operations will be started in five new wells within a few days. The Ohio Oil Co. finished two new wells, No. 1 in Block L being good for 510 bbls. per day and No. 1 in Block K 310 bbls. daily. The former was bottomed at 4,570 feet and finished with a 6⅝-inch liner carrying 1,071 feet of perforated, while the latter was finished at 4,625 feet. Getty Oil Co. finished its seventh successful completion in the Playa Del Rey Field a few days ago when No. 7 Venice, completed at 4,350 feet and finished with a 6⅝-inch liner, including 758 feet of perforated, was brought in on the beam pumping 210 bbls. of 22.1 gravity oil per day.

Beverly Hills Petroleum Corp.'s No. 2 Burkholder was an exceptionally good well upon completion in the Del Rey zone as this new well, finished at 4,488 feet with a 5¾-inch liner carrying 992 feet of perforated, came in flowing 1,146 bbls. of exceptionally clean 23.5 gravity oil per day. The Bartley Petroleum Co.'s No. 1 Venice was another satisfactory completion as it was good for 540 bbls. of 23.6 gravity oil per day from 4,569 feet. Geffeney & Gahn's No. 1 Venice, on the other hand, tested wet on a production test and will require further work. This well, which picked up the top of the conglomerate at 6,300 feet, was bottomed in the Schist at 6,322 feet. The Pacific Shore Oil Co. has just finished its second completion in the Playa Del Rey Field and this well, No. 1 Krouskop, registered an initial of 930 bbls. of 24.1 gravity oil per day from 5,657 feet. Toy, Redhouser Petroleum Co.'s No. 1 Del Rey, drilled to completion in the Del Rey zone at 4,242 feet and finished with a 5-inch liner containing 673 feet of perforated, was brought in flowing 522 bbls. of 23.1 gravity oil. Venice Pacific Oil Co.'s No. 1 Del Rey was an unusually good completion in the deep zone as this well, bottomed in the Schist at 5,757 feet and completed with a 4-inch liner carrying 198 feet of perforated, was brought in flowing 945 bbls. of 23.4 gravity oil. Metropolitan Oil Corp.'s No. 1 D.&G. and Marcel Oil Corp.'s No. 1 Black were both finished, and, while complete 24-hour gauges are not yet available, they look good for 450 bbls. each. The former was bottomed at 4,439 feet and finished with a 4¾-inch perforated liner, while the latter was completed at 4,255 feet and finished with a 5¾-inch liner carrying 584 feet of perforated. C. Ed Lewis finished his second producer when No. 4 Wolfe was brought in a few days ago flowing 220 bbls. from 4,425 feet, the hole having been finished with a 5-inch liner including 790 feet of perforated. The last two wells finished at Playa Del Rey this week were both completed in the deep Recreation zone. These were Pan Gulf Petroleum Co.'s No. 1 Venice and Twin Buttes Oil Co.'s No. 1 Byrens. The former, finished at 6,150 feet, is flowing at the rate of 400 bbls., while the latter, bottomed at 6,190 feet and finished with a 4¾-inch liner carrying 290 feet of perforated, is good for 350 bbls. initially. Northern Investment Co. finished its first producer in the Playa Del Rey Field when its No. 1 Booth, a new well, was brought in under a natural flow doing 630 bbls. initially from 6,292 feet. Tideland Oil Co. also appeared on the production list for the first time this week due to the completion of its No. 1 Venice flowing 380 bbls. from 4,540 feet, the hole having been finished with a 5-inch liner containing 1,098 feet of perforated.



Shell Oil Co.'s discovery well in Weed Patch Field, California, with No. 1 Porter, the company's second test, to the left.

Long Beach

Completions in the Long Beach Field were not especially impressive as none of the wells registered substantial production. The Dabney-Johnston Oil Corp., which has been pursuing an aggressive and successful drilling campaign in the Long Beach Field for a year, headed the list when No. 78 Signal, a new well, bottomed at 7,584 feet and finished with a 4¾-inch perforated liner, was brought in under a natural flow doing 735 bbls. of 26.1 gravity oil. Primar Oil Corp.'s No. 1 Long Beach, a new well, completed at 7,641 feet, came in under a natural flow doing 526 bbls. of 24.2 gravity oil and 2,100,000 feet of natural gas. The production of this well is still cutting in excess of pipe line specifications but appears to be cleaning up and may ultimately get below the permissible cut of 3 per cent. West American Oil Co. failed to secure a natural flow in No. 1 Signal, a new well finished in the shallow sand at 4,754 feet, and was consequently obliged to put it on the beam. The initial pumping was 550 bbls., but production has subsequently declined to 360 bbls., the oil being unusually clean and testing 27.1 degrees. Adams & McFadden had a little better luck with No. 1 Signal as far as gas pressure is concerned but the output is showing a rather high cut which may necessitate another cement job. This new producer, completed at 7,465 feet and finished with a 3-inch liner carrying 1,098 feet of perforated, was brought in flowing 700 bbls. of fluid cutting 50 per cent water. Bush Oil Co.'s No. 2-A Brennecke and Chessman & Riner's No. 1 Stockwell both failed to show sufficient kick to result in a natural flow upon completion and preparations are consequently under way to put them on the beam. The former was completed at 6,830 feet and finished with a 6⅝-inch liner carrying 1,054 feet of perforated, while the latter was finished at 6,736 feet, having been plugged back from 6,772 feet. The M. & A. Oil Co. recompleted No. 1 Signal a few days ago and this well, redrilled and deepened from 4,890 feet to 4,932 feet, was returned to production doing 400 bbls. of 25.6 gravity oil.

Ventura Avenue

The Shell Oil Co. successfully finished No. 58 Taylor, a new well in the Ventura Avenue Field, and this project, bot-

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tomed at 5,580 feet and finished with a 9⅝-inch oil string landed at 5,580 feet and cemented through perforations at 5,149 feet, was brought in flowing 690 bbls. of 29.7 gravity oil through a three-fourths inch bean under a casing pressure of 490 pounds. Both the Associated and Shell are working on potential producers scheduled for early completion and a check indicates the probability that at least two additional wells will be finished during December. All operators in the Elwood Field of Santa Barbara County have decided to suspend drilling operations immediately upon conclusion of work now under way and no further drilling will be undertaken except where offsetting is necessary. This suspension of development work is being initiated in the interests of conservation and is based on the theory that operators can never hope to reach their curtailment objective as long as drilling operations continue.

New Weed Patch Field

The Shell Oil Co. resumed drilling operations in No. 1 Porter Day, a wildcat which recently proved up the existence of a new oil field in the Weed Patch area of Kern County, and, although it was the original intention to thoroughly determine the potentiality of this new zone, it was later decided to prospect ahead. No. 1 Porter Day is located in an orange grove and to make the picture complete the snow-capped Sierras appear in the distance. This well's recent flow test was from the second productive zone encountered and under ordinary production methods it would have made at least 2,500 bbls. per day instead of the 1,500 bbls. with which it is credited. Shell's No. 1 Porter, located a few hundred feet away from the discovery well, and Mohawk's No. 1 Wharton are both making good progress and should encounter the first zone in the near future.

L. C. Osborn successfully finished a new well in the Fruitvale Field of Kern County and this producer located in Section 21-29-27 is flowing 310 bbls. of 21.6 gravity oil per day. It was finished at 4,063 feet with a 6⅝-inch liner carrying 67 feet of perforated. The Standard Oil Co.'s No. 4 on Kern County Lease No. 5 in Section 26-29-27 east of the field has resolved itself into a deep test but as nothing resembling production has been found down to 6,110 feet it is definitely beyond the productive limits of the Fruitvale structure. There were no developments of special importance in any of the other San Joaquin Valley fields except for the spudding in of No. 1 Signal of the Richfield Oil Co., a new well in Section 36-21-17. No. 2 Felix of the Petroleum Securities, located on fee acreage in Section 35-21-17, will probably be the next well finished at Kettleman Hills as this project is rotating in a hard gray oil sand at 7,220 feet. No. 1 Felix, the first producer finished on this lease, was completed at 7,276 feet but the well now under way will undoubtedly be carried much deeper as the Associated's No. 1 Whepley registered much larger production from a depth of 7,904 feet. The Standard's No. 65 in Section 29-21-17, an offset to the Superior Oil Co.'s No. 1 Huffman, the largest well finished in the North Dome of the Kettleman Hills up to the present time, is making good progress and with the bit at 7,400 feet the outlook is favorable for production within six weeks. The Union's first well on the King lease, which is being developed jointly with the Amerada Petroleum, is rotating at 4,066 feet.

Santa Maria

The West Gulf Oil Co. is making preparations to test out its No. 1 Bradley in the Santa Maria district and the status of this well should be determined within 15 days. A string of 9-inch pipe has been landed at 4,700 feet, at which depth a rather promising oil sand was logged. This well in Section 5-9-33 is down 4,778 feet. If commercial production is secured, the Western Gulf will have discovered a new field about 5 miles northeast of the original Santa Maria Field and approximately a similar distance northwest of the Cat Canyon Field. About 1 mile south of the Western Gulf's present test, O. C. Field's No. 1 Bradley is drilling at 5,270 feet following the landing of a string of 6⅝-inch casing at 5,025 feet. In the Purisima section of the Santa Maria group of fields the Vaqueros Major Oil Co. has suspended operations due to the inability to find a suitable market for production. This company has finished two wells capable of producing and had a third hole down 1,465 feet at the time of suspension. The property being developed by this company is at the extreme eastern edge of the Purisima structure.

In the Capitan Field of Santa Barbara County, the General Petroleum's No. 8 Erburu, a deep test in Section 32-5-30, is down 3,348 feet. The predominating formation is a red sandy shale, a characteristic member of the Sespe formation. The General Petroleum has finished seven small wells in this field and No. 8 Erburu was selected as a deep test to determine the potentiality of the field. If this well fails to develop larger production, the Capitan Field will probably be of secondary importance as all of the wells finished to date have been relatively small producers of heavy oil.

DEEP TEST IN THE MUSKEGON FIELD BELIEVED NEARING ITS OBJECTIVE

By Paul A. Elliott

MUSKEGON, Mich., Dec. 1.—Three Marshall gas wells and a small Dundee oil producer were completed in the Mount Pleasant and Clare County fields of central Michigan. Two wells drilled into the Monroe formation in the proved Muskegon Field failed to make large commercial gas production as had been hoped but the first deep test in the field penetrated the Salina and expected to strike the Niagara limestone and possible pay sands this week.

Operators at Muskegon are engaged in a race downward below the known pay sands of the Traverse and Dundee limestones in an effort to obtain new natural gas production to save the Muskegon Gas Co. from being forced to change back from natural to artificial gas.

Two delays of one week each have been requested by the Muskegon city commission and granted in each occasion by the company pending the outcome in deep tests. Indications are that the Niagara limestone is the only present hope of new gas reserves and the Muskegon Deep Well Syndicate's No. 5 Herman Heinz, NE NE, Section 8-10n-16w, Muskegon Township, is believed to be within 200 feet of the final answer.

One small gas well was completed in the upper Traverse in the proved field and immediately was turned into the gas

(Continued on Page 135)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Union, No. 1 Orchard Dale, Los Angeles Co.	10- 3-11	6,060	sd. sh. drilling
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	4,700	sd. sh. drilling
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	418	sd. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	cleaning out
Francis Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	suspended
Central Oil Co., No. 1 Compton, Los Angeles Co.	28- 3-13	5,094	suspended
Allison Synd., No. 1 Baldwin, Los Angeles Co.	8- 2-14	mtl.	building rig
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 2-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	3,300	testing
Cal. Ventura Oil Co., No. 3 Hermosa, Los Angeles Co.	31- 3-14	....	material
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6- 4-14	rig	suspended
Wolfe, George, No. 1 Hermosa, Los Angeles Co.	6- 4-14	mtl.	building rig
Wood, C. L., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	....	foundation
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
McKeon Drlg. Co., No. 1 Watts, Los Angeles Co.	1- 3-14	511	sd. sh. drilling
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	6,295	suspended
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	5,650	redrilling
San-Van Oil Co., No. 1 Van Nuys, Los Angeles Co.	14- 1-16	rig	rigging up
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	3,726	35 bbls. daily
Rucker & Smith, No. 2 Puente, Los Angeles Co.	27- 2-10	rig	rigging up
Bardeen Pet., No. 2 Puente, Los Angeles Co.	2- 2-10	614	sd. sh. drilling
Vega Pet. Corp., No. 1 Puente, Los Angeles Co.	14- 2-10	....	grading
Bidart Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3- 2-10	4,620	cleaning out
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	1,092	cleaning out
Kock & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	gas—shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	rig	portable equip.
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,278	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,695	fishing
Union, No. 1 Coyote Sansinena, Los Angeles Co.	30- 2-10	5,200	suspended
Nesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	2,900	hd. sd. drilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	1,010	suspended
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., No. 1 Brawley, Imperial Co.	36-11-10	3,240	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	suspended
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	13-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,175	gr. sd. drilling
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	4,885	hd. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 3	2,392	suspended
San-Col Oil Co., No. 1 Colton, San Bernardino Co.	18- 1- 4	240	sd. drilling
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	1,549	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	854	gr. sd. drilling
The Texas Company, No. 1 Olive, Orange Co.	7- 4- 9	....	material

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	6,730	reaming
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,570	suspended
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	4,778	to set pipe
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	5,577	sd. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,730	gr. sd. drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	3,100	br. sh. drilling
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	3,800	sd. sh. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	4,628	hd. sd. drilling
Johnson, George, No. 1 Goleta, Santa Barbara Co.	X- 4-28	4,089	hd. sd. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	7,518	recemented
Rio Grande, No. 1 Lankershim, Ventura Co.	13- 4-19	1,820	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,488	sd. sh. drilling
California Republic, No. 1 Sespe, Ventura Co.	23- 4-21	rig	suspended
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	2,984	sd. sh. drilling
Lockwood Valley Oil Co., Well No. 1, Ventura Co.	32- 8-21	226	hd. sd. drilling
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	5,550	sd. sh. drilling
Superior Oil Co., No. 1 Buttonwillow, Kern Co.	32-29-25	rig	rigging up
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	4,742	sd. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,640	sd. sh. drilling
The Texas Company, No. 1 Belridge, Kern Co.	22-27-20	2,174	sd. sh. drilling
Richfield, No. 1 Belridge, Kern Co.	20-27-20	5,804	to set pipe
Standard, No. 1 Belridge, Kern Co.	31-27-20	1,143	sd. sh. drilling
Ohio Oil Co., No. 1 Belridge, Kern Co.	36-27-20	2,644	br. sh. drilling
Union, No. 17 Belridge, Kern Co.	36-27-20	311	sd. drilling
Union, No. 1 South Belridge, Kern Co.	27-28-20	....	location
Rio Grande, No. 1 Belridge, Kern Co.	18-28-22	3,680	suspended
Reward Oil Co., No. 1 Belridge, Kern Co.	34-27-20	1,536	sd. sh. drilling
Shell, No 3 Belridge, Kern Co.	24-28-20	940	suspended
Shell, No. 4 Belridge, Kern Co.	14-28-20	1,210	core hole
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	3,864	sd. sh. drilling
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Shell, No 1 Weed Patch, Kern Co.	29-30-29	6,070	deepening
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	3,614	sd. sh. drilling
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	4,397	sd. sh. drilling
Pet. Sec., No. 1 Edison, Kern Co.	14-29-29	3,671	gr. sd. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,574	sd. sh. drilling
Shell, No. 1 Semitropic, Kern Co.	17-27-23	8,170	hd. sd. drilling
Cities Service, No. 1 Wasco, Kern Co.	16-28-24	mtl.	core hole
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	714	hd. sd. drilling
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,560	suspended
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-22	1,190	suspended
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	4,368	br. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	4,894	cleaning out
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	3,014	sd. sh. drilling
Carruthers Oil Co., No. 1 Fresno, Fresno Co.	4-17-20	rig	suspended
Miracle Oil Co., No. 1 Cuyama, San Luis Obispo Co.	17-10-25	rig	rigging up
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	suspended
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	21-27-11	3,941	cleaning out
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	1,762	sd. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	380	cemented
Pismo Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	cleaning out
Shockley, C., No. 1 Pismo, San Luis Obispo Co.	18-32-13	877	hd. sd. drilling
Standard, No. 1 King City, Monterey Co.	23-22- 7	5,742	hd. sd. drilling
Pacific Inland, Well No. 1, Monterey Co.	19-23-15	878	hd. sd. drilling
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	816	cleaning out
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Murphy Oil Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	1,512	sd. sh. drilling
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,050	suspended
Purman, T. H., No. 1 Reef Ridge, Kings Co.	36-23-17	rig	rigging up
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	5,170	sd. sh. drilling
Orinda Pet., Well No. 1, Contra Costa Co.	32- 1- 3	741	hd. sd. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,495	suspended
Campbell Oil Co., No. 1 Porterville, Tulare Co.	22-22-27	857	suspended
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	918	abandoned
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	1,022	suspended
Mills & Wilson, No. 1 Porterville, Tulare Co.	35-22-27	913	suspended
Jennings Synd., No. 1 Porterville, Tulare Co.	8-23-28	510	suspended
Terra Bella Drlg. Co., No. 2 Porterville, Tulare Co.	34-22-27	920	suspended
Jaques Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	914	suspended
Hallock, William, No. 1 Porterville, Tulare Co.	34-22-27	1,090	suspended
Kern Pet. Co., No. 1 Porterville, Tulare Co.	34-22-27	1,184	suspended
Miller & Sylvan, No. 1 Porterville, Tulare Co.	11-23-27	1,030	suspended
Larson Oil Co., No. 1 Porterville, Tulare Co.	11-23-27	1,200	sd. sh. drilling
Kettleman Trust, No. 1 Porterville, Tulare Co.	21-22-27	940	suspended
Lewis, Paul M., No. 1 Porterville, Tulare Co.	15-22-27	1,118	suspended
Turk & Campbell, No. 1 Porterville, Tulare Co.	34-22-27	1,352	suspended
Roetner Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	1,480	cleaning out
Wells & Armstrong, No. 1 Porterville, Tulare Co.	10-22-27	210	suspended
Enterprise Oil Co., No. 1 Porterville, Tulare Co.	29-23-28	700	fishing
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,060	reaming
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	770	hd. sd. drilling
Getty Oil Co., No. 1 Nigger Heaven, Yolo Co.	23-12- 3	2,050	suspended

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More Completions in Central West

But Few Small Oil Producers, Dry Holes and Good Number of Gas Wells. Two Wells Above Average in Findlay Field

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio., Dec. 1.—More completions are reported from the Central West division, with a few small oil producers, dry holes and a good number of gas wells, with excellent weather conditions for field work. Nine completions were reported from the old Lima Field of northwestern Ohio, with one producer with an initial production of 22 bbls., two dry holes and six gas wells. There were also 25 old producing wells abandoned, some of which were completed back in the 90s, more than 30 years ago.

The only oil producer reported from the Lima Field was found in the Tiffin Field, where the Kansas-Ohio Oil and Gas Co.'s No. 1 Joseph Swartzmiller farm, Section 28, Liberty Township, Seneca County, had an initial of 22 bbls. In Pleasants Township, same county, the Marvella Oil & Gas Co.'s No. 4 Ida M. Rosenberger farm, Section 31, was a dry hole at 1,505 feet. In Eden Township, O. S. Barnaby and others' No. 1 John Feigelist farm, Section 20, is a light gas well at 1,667 feet. No. 2, same farm, drilling. In Bloom Township, same county, C. L. Williams found a dry hole on the P. Stuckey farm, Section 32, Bloom Township, at 1,980 feet. In Jackson Township, in the southwestern part of Seneca County, near Rising Sun, the Ohio Oil Co. abandoned Nos. 2, 6, 7, 9, 10 and 14 on the Reinbold Heirs, south 80 acres, Section 16, and No. 4 on the Reinbold Heirs, north 80 acres, same section. Onsel Brothers abandoned Nos. 4 and 5, Lewis Boyd farm, Section 1, and Nos. 9, 10 and 11 on the Ira L. Soule farm, Section 4, same township. In Hopewell Township, same county, Arthur Geyer is drilling on the H. E. Swartz farm, Section 25, and W. E. Wilson, trustee, is drilling on the Isaac R. Martin farm, Section 33, Clinton Township, also in Seneca County.

In Kenton Field

In the Kenton Field, Pleasants Township, Hardin County, Bert Sheldon drilled a fair gas well on the George Schwimmer farm, Section 6, and drilling No. 2 on the Leroy G. Doll, same section. Pleasants Oil & Gas Co. has a fair gas producer on the Jonathan Oats farm, Section 5, at 1,348 feet, while the Sheldon well mentioned got its gas at a total depth of 1,330 feet. Hardin County Quarries Co.'s test on its own property, Section 6, is also a fair gas well at 1,375 feet. Pleasant Oil & Gas Co. is drilling No. 3 on the Minnie Burnison farm, Section 6. In Cessna Township, Egan & White have a fair gas well, with a showing of oil in No. 1 on the Phoebe L. Gardner farm, Section 12, at 1,424 feet, and not yet completed. American Oil Development Co. is drilling No. 1 George H. Reed farm, same section, and the Ohio Oil & Gas Co. is drilling No. 1 C. E. and C. L. Curtis farm, Section 1, Cessna Township, while Underwood & Neely are starting a test on the John Orth farm, Section 17, same township.

In Ottawa County, Allen Township, just out a short distance southeast of Toledo, the Ohio Oil Co. abandoned No. 3 P. Hartman farm, and No. 4 August Schimming farm, both in Section 3.

In Sandusky County, Washington Township, near Hessville, W. C. Richards and others brought in a gas well on the H. Bloom farm, also a fair gas well in No. 1 on the N. Bowersox farm, both in Washington Township. C. W. Sapp is drilling on the J. W. Miller farm, Section 32, Jackson Township, same county.

In Wood County, Montgomery Township, the Ohio Oil Co. abandoned Nos. 5, 6, 7 and 8 Andrew Emerine farm, Section 17, and Nos. 2, 3 and 4 Nancy E. Snyder farm, Section 14. In the same township, Onsel Brothers abandoned Nos. 4 and 5 Bertha I. Phillips farm, Section 36, and No. 11 on the William Wallam, same section. In Perry Township, same county, Hattie M. Hamilton and others abandoned old No. 7 on the Fred Hamilton farm, Section 1.

Two wells above the average are reported from the Findlay Field, of Hancock County, the largest being R. W. Kirk and other's No. 3 on the H. B. Kurtz farm, Section 34, Biglick Township, with an initial of 100 bbls. from the Trenton. The other is the Base Line Oil Co.'s No. 10 Elias Crow farm, Section 32, Liberty Township, same county, and showed an initial of 30 bbls., from the same formation.

Oil Meeting

The Lima Oil Producers' Association of Northwestern Ohio held a meeting at Cygnet, Wood County, and discussed the problem of marketing Lima crude oil. Announcement was made that after November 25 the Ohio Oil Co. will buy all oil stored by producers as well as all their future output at $1.10 a barrel. The oil is refined by the National Refining Co., the Standard Oil Co. and the Pearl Oil Co.

CENTRAL OHIO

Twenty-five completions were reported in the Central Ohio Field, with 5 producers with an initial of 178 bbls., 10 dry holes and 10 gas wells, while in new work under way there were 5 locations made and 19 wells started spudding, a total of 24, only a slight decline for numerous weeks back.

In Ashland County, Orange Township, the Ohio Fuel Gas Co.'s No. 1-5,357 on the Federal Land Bank property, Section 16, is a gas well, while its No. 1-5,323 on the H. A. Straits farm, Section 29, same township, was a duster. Wile and others drilled a dry hole in No. 4 Henry Mosher farm, lot 22, Lake Township, from 539 to 549 feet, which is the Berea sand.

In Medina County only one completion was reported, the Edson Co.'s No. 9 George W. Packard farm, Section 4, Chatham Township, which produced an initial of 25 bbls. from 325 to 361 feet. No. 10, same farm, is drilling. The Oko Oil & Gas Co. is drilling No. 16 Henry Essig farm, Section 3, same township.

In Lorain County, Carlisle Township, A. F. Keck and others' test on the J. & O. Simms farm, Lot 9, was a dry hole in the Clinton lime from 2,275-78 feet. Elyria Steel & Tube Co. is drilling No. 1 Charles A. Huene farm, lot 7, same township. Wiser Oil Co. drilled a dry hole on the Terry C. Whitney farm, Lot 48, Pittsfield Township, same county from 2,154-57 feet. McMillan and others are drilling on the L. L. Blantern farm, lot 12, Grafton Township, and Dillon & McFrederick is drilling a second test on the Cora A. Mills farm, Lot 73, Columbia Township.

Wayne County

In Wayne County, Congress Township, Short and others have a light gas well in No. 3 on the Anna Younker farm. Section 16, in the Clinton lime from 3,056-70 feet. Hulse & Kundtze drilled a dry hole in a second test on the W. A. Firestone farm, Section 19, Chester Township, where no sand was found. Same parties are drilling No. 2 Ed Landis, Section 19, and Faulkner and others are drilling No. 1 A. Roman farm, Section 35, same township.

In Holmes County, Richland Township, Ohio Fuel Gas Co., got a dry hole in the Clinton lime in No. 1-5,335 on the Herschel Jones farm, Section 10. Lydic Oil & Gas Co. is drilling No. 6 Charles Shank farm, Section 10, Monroe Township, and the Arkansas Fuel Oil Co. is starting No. 4 on the James T. Patterson farm, Section 12, same township.

In Coshocton County, Pike Township, William Stevens found a 3-bbl. pumper in No. 2 Henry Noland farm, Section 12, from 3,265 to 3,325 feet. The Preston Oil Co. is drilling No. 1-1,460 on the Alonzo Vanwinkle farm, Section 14, Perry Township.

In Summitt County, Franklin Township, East Ohio Gas Co. has a gas well in a second test on the N. C. Slater farm, Section 25, from 4,093 to 4,119 feet. Smith and others found a nice gas producer on the Charles A. Smith farm, Section 19, Greene Township, same county, from 4,005-29 feet. East Ohio Gas Co. is drilling No. 1 W. J. Caston farm, Section 25, same township.

In Licking County, Hanover Township, the Hope Construction and Refining Co. struck one of the best wells of the week in No. 3 on the Minor-Obannon farm, Section 16, which is reported at 120 bbls., initial from 2,865 to 2,905 feet. Armbruster & Strickler have a light gas well in No. 6 William Strickler farm, Section 23, Mary Ann Township, same county, from 754 to 761 feet. E. J. Edman found a dry hole in a second test on the Orville Wise farm, in the Fourth-Quarter section of Madison Township, same county, from 601 to 606 feet. In Newark Township, the Ohio Fuel Gas Co. is plugging off the Cinnamon sand in its No. 1-5,275 on the Guy Watkins farm, Section 4, and drilling deeper.

In Muskingum County, Brush Creek Township, Hopewell Gas Co. has a gas well in No. 3 on the E. J. Swingle farm Section 17, from 4,021-50 feet.

Athens County

In Athens County, Cannan Township, the Ohio Fuel Gas Co. has a gas we in No. 1-5,372 Harry M. Roach farm Section 2, in the lower Brea sand a 1,421 feet. Nuzum and others have gas well in No. 4 on the Elmer Halbe farm, in fractional Section 3, same township, in the same formation at 1,460 fe while Lewis Jones found a dry hole No. 1 George Brechtel farm, same section, at a shallow depth of 276 feet. A Snider and others are drilling No. 1 B Jackson farm, Section 23, York Township Bowser Oil & Gas Co. got a dry hole No. 2 on the F. H. Ahrendt farm, Sectic 36, Troy Township, same county, 1,079 feet.

In Tuscawaras County, Warrick Township, Blackstone and others found a dr hole on the Adam H. Boltz farm, in th Second-quarter section at 3,488 feet. Local Oil Co. is drilling a second test on the J. H. Weaver farm, Section 3, Fairfield Township, same county.

In Stark County, the East Ohio Gas Co. found an unusually good gas well in No. 1 on the Henry C. Rudy farm, Section 6, Jackson Township, from 4,150-77 feet. F. A. Brendall and others are drilling No. 1 on the Lake Cable Co.'s tract, Section 14, same township. In Lawrence Township, Wittmer Prop., trustee, made a location on the E. R. Donnerworth farm, Section 10, Lawrence Township. Same parties are drilling No. 1 Henry Kingsbury farm, Section 1, same township.

In Guernsey County, Wheeling Township, Ohio Fuel Gas Co.'s No. 4-1,449 Amanda E. Robinson farm, which pro-

(Continued on Page 113)

LEGRANDE POOL, IN HART COUNTY, HOLDS ATTENTION IN KENTUCKY

By George A. Whitney
Staff Correspondent, Kentucky Fields

HORSE CAVE, Ky., Dec. 1.—The Legrande Pool, several miles east of Horse Cave, in Hart County, is the center of gravity for oil and gas development in the Kentucky Field at this time. It is a most wonderful shallow development with big oil producers, gas wells and an occasional dry hole, the latter not having any effect upon further development. The wells are inexpensive as the gas pay is found around 450 feet and the big oil pay at close around 600 feet, and reports are that drilling is being done at a price of $1.25 per foot.

The more oil operators see of the Legrande Field, they say it resembles more the Big Sinking Field of Lee County, than any other spot in Kentucky so far developed, and the Lee County Field was a wonder in its day. At the same time, it must be remembered that the Scottsville Field in Allen County, which was a shallow development, was among the best found in the state, to say nothing of the one time large producing Bowling Green Field of Warren County, which was followed by the opening of the Owensboro-Pellville-Hartford areas of the Tri-County Field, which is also a remarkable producing area. The Niagara Field in Henderson County has made a good showing, but the wells are usually small, while McLean County developed some fine territory, but the supposition is that Union County will come to the front with some big production, as the oil is found at a greater depth than in the other counties mentioned. The Glasgow Field of Barren County must not be overlooked as it is one of the oldest producing counties in Kentucky, with plenty of good looking territory yet to drill, especially in the north part of the county up against the Hart County line, while other counties adjoining Hart County are in line for more thorough testing. Numerous counties in the western part of the state have not yet been given any tests, outside of a few and they may yet surprise the trade.

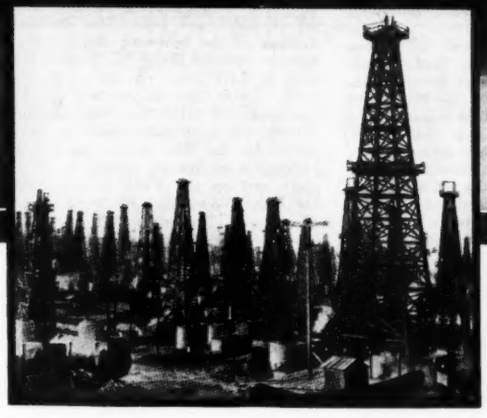
Legrande Field

Out of 13 wells completed in the Legrande Field, of Hart County, 8 were producers with a reported initial of 1,010 bbls., 4 gas and 1 dry.

Legrande Oil Co.'s Nos. 1 and 2 on the Buford Ross farm, estimated at 200 and 150 bbls. B. F. Wilson and others' No. 1 E. M. Branstetter farm, near the McKinnie discovery well, is rated around 100 bbls. Dulworth & Taylor's No. 2 Abe Garvin farm is reported around 200 bbls., northwest from the discovery well some distance, and in what looks like a rich producing area. Rex Spearman Oil Co.'s No. 1 Payton farm is reported around 100 bbls. initial. Unknown parties' No. 1 Hobart Carter farm, made 100 bbls., and No. 1 Edward Smith farm, 100 bbls. Harrodsburg Oil & Gas Co.'s No. 1 Geoble Perkins farm is estimated at 60 bbls., and the same company has a nice gas well on the Trigg Chaney farm. Dulworth & Taylor drilled a good gas well on the Cosby Church lot, a mile northeast of the discovery well. Ollie Norris struck a gas well in No. 1 on

(Continued on Page 113)

RUBBER LOWERS COSTS



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Southeast Ohio Continues Activity

Semiwildcat in Fairfield County Arouses Interest. Six Completions in Medina County. Two Oil Wells in West Virginia

By Staff Correspondent

PITTSBURGH, Pa., Dec. 1.—At this time of the year in the eastern fields drilling schedules are generally pushed ahead to completion before bad weather arrives. This year is an exception because the fields, in the gas areas, have yet to be relieved of the water shortage which has hampered operations all spring and summer. Drilling for oil in West Virginia and southeast Pennsylvania is practically at a standstill, though southeast Ohio continues fairly active. During the week there were 42 wells completed in the three districts, none large, but one or two of more than passing interest. Initial production from new oil completions reached a new low level with but 182 bbls. in southeast Ohio and 10 bbls. in West Virginia.

SOUTHEAST OHIO

An interesting completion in southeast Ohio, which inclines towards being a wildcat, was a test in Walnut Township, Fairfield County, which was drilled in by the Hopewell Fuel Gas Co. and others on the Stanley Holiday farm in the SW Section 14. It reached the Berea sand at 1,950 feet and is showing for 5 or 10 bbls. a day. This well is 4½ miles northwest of the nearest production.

In York Township, Athens County, the Wittmer Oil & Gas Properties drilled a test in the NE Section 23, on the Building & Loan property, in the Clinton sand at 3,380 feet and it was dry. Bell Brothers and others completed a second well on the Slocum Brothers farm, in Tuscarawas Township, to a depth of 1,080 feet, in the Berea sand, and it is showing for a 2-bbl. pumper. W. C. McBride, Inc. had a duster in No. 4 on the Dement and Howell tract in the SW Section 1. Somerset Township, Belmont County. It was completed at 1,955 feet in the Berea sand.

In Harrison County, Frank Quinn completed No. 13 on the John McLandsborough farm, 1 mile north of Scio, Section 32, North Township, in the Berea grit at 1,200 feet and it made 2 bbls. the first day after shot. In Knox County, the Preston Oil Co. had a fair well in No. 2 on the A. J. Beatty farm, Section 1, Jackson Township, which was drilled in the Clinton sand at 3,145 feet and produced 40 bbls. the first day after shot. There were two completions in Licking County, the larger being Ralph Norpell and others' No. 3 on the William D. Booth farm, Section 13, Fallsbury Township, and in the pool operation. It reached the pay at 3,043 feet and in the Clinton sand and made 60 bbls. the first day after shot. In the edge of the pool in the same township, I. C. Robinson and others' drilled a test on the Dora Myers farm, Section 15, in the Clinton sand at 3,024 feet, which made 35 bbls. the first 24 hours after shot.

Medina County

Medina County had six completions and they were all by E. R. Edson & Son Co. and in the shallow sand operations in Chatham Township. Its No. 6 on the M. A. and Eva Franks farm, Lot 20, Section 16, was completed at a depth of 468 feet and it produced 20 bbls. the first day after shot. No. 9 on the George W. Packard No. 1, Lot 4, Section 13, was completed at 376 feet and made 5 bbls. the first day after shot. No. 9 on the Archie E. Packard farm, Lot 6, Section 13, was drilled to a depth of 374 feet and it was good for 4 bbls. the first 24 hours after shot. No. 5 was completed at 452 feet on the M. A. and Eva Franks farm, Lot 20, Section 16, and it made 3 bbls. initial after shot. No. 33 on the William Ripley farm, Lot 1, Section 13, was drilled in at 515 feet and was dry. No. 10 on the George W. Packard farm, Lot 4, Section 13, was also dry and at a depth of 424 feet.

In Washington Township, Muskingum County, the Atha Oil Co. completed a test on the Imhoff and Butt property in the Clinton sand at 4,092 feet and it is estimated good for 750,000 feet a day. The same company completed a test on the L. M. Bryan lease No. 2, in the NE Section 22, Perry Township, Muskingum County. It was drilled through the Clinton sand which was dry and in the Red Rock at 4,320 feet and it is showing for a small gasser estimated at 20,000 feet.

In Washington County, Lot 46, near Warner, Salem Township, George Chichester and others completed a test on the H. Neuberger farm in the Buell Run sand at 289 feet and it is a light gas well. In Lot 51, near Whipple in Salem Township, the Morningstar Oil Co. completed No. 2 on the C. Gearhart farm in the Buell Run at 494 feet and it produced 1 bbl. the first day after shot. In Lot 40, same section, R. O. Wooster and others drilled a second well on the A. C. Vecker farm also in the Buell Run sand and to 284½ feet and it was dry. In Lot 41, Salem Township, the Thomas Oil Co. completed No. 2 on the J. W. Moore farm to 283 feet and it was dry.

Drilling in Ohio

In Coshocton County, which is not very active, the Preston Oil Co. is spudding in on the Alonzo Van Winkle farm, Section 14, Perry Township. In Section 5, of Pike Township, McClay Brothers and others are down to 2,840 feet on the A. L. Rine farm. This will probably be drilled to the Clinton sand which is reached at about 3,300 feet.

In Muskingum County, Fetty and Louchery are moving in tools to start drilling on the Russell White farm in Highland Township. The Atha Oil Co. has four wells drilling in this county, all of which are tests. The company is drilling at the following depths: On the George Heinle farm in Wayne Township at 3,720 feet; on the L. M. Bryan farm, Lease No. 2, Section 22, Perry Township, at 4,140 feet, and dry in the Clinton sand, it will probably be completed in the Red Rock; on the Julia Detenbeck in Wayne Township at 3,500 feet; and on the Fred Arnold farm in the same township at 3,310 feet. In Washington Township, Wilson Brothers have a rig standing on their own property, and in Section 16, Perry Township, the Preston Oil Co. has rigged up on the John C. Hicks farm. In Section 6, Hopewell Township, which boasts of a pool formation, the Preston Oil Co. has rigged up for No. 6 on the M. Leasure farm. In Section 3, Clay Township, William Cline and others have a rig standing on the Howard H. Doyle farm.

In Perry County, the Wehrle Co. has had to shut down after reaching 2,000 feet on the Frank Hammond farm, Section 21, Clayton Township, until the drought is over. In Section 31, of the same township, the same company has a rig standing on the Wolf heirs' farm. In Section 1, Jackson Township, W. G. Perrigo has a rig up on the J. A. and W. E. Donnelly farm for No. 6. In Reading Township, Section 16, Shenker and Bowman are down to 2,500 feet on the Kulp heirs' farm. In Section 1, same township, the Miller Oil & Gas Co. has reached 2,000 feet on the Samuel Hoover farm.

Knox County

In Knox County, the Preston Oil Co. has two wells drilling in Jackson Township, No. 2 on the W. Scott Beatty farm in Section 2, drilling at 1,200 feet and No. 2 on the A. J. Beatty farm in Section 1, drilling at 3,000 feet. Both wells will go to the Clinton sand. In Section 11, Clay Township, I. C. Robinson & Co. have reached 1,400 feet on the Thomas O. McKee farm. In Jefferson Township, the Reno Oil Co. is down to 3,000 feet in a second test on the S. S. Day farm. Section 11.

In Jefferson County, William Graham & Co. are drilling on the G. W. Green farm, Section 22, Island Creek Township, and have reached 1,200 feet. In Section 9, same township, a local group is testing on the D. S. Carr farm and is down to 500 feet. The Benedum & Trees Co. has started a test on the Wayne Coal Co. property in Island Creek Township and Section 26 and has reached 200 feet. The test of Brown, Vorhees and others on the Dorrance farm in Springfield Township is still standing at 1,100 feet

WEST VIRGINIA

In West Virginia there were but two oil wells completed, the larger in Glenville district, Gilmer County, where the Carnegie Natural Gas Co. completed its second well on the J. N. Hiner farm in the Big Injun sand at 1,880 feet showing for a 10-bbl. producer. The other was in the same county but Troy district and was the test of the Midland Oil & Gas Co. on the P. R. Woofter farm drilled to a depth of 2,190 feet and in the Big Injun sand. It has a light show of oil and is shut down for orders.

Gas Wells

In Calhoun County there were three gas wells completed, one very fair, which was the test of the Rocksdale Oil & Gas Co. on the C. C. Starcher farm in Lee district, drilled in the Injun sand at a depth of 2,289 feet. It is estimated good for over 1,000,000 feet a day. In the same district, F. F. McIntosh completed two wells, both small gassers, No. 5 on the W. H. Slider farm in the Injun sand at 2,235 feet, and No. 2 on the Allen Hardman farm at 2,044 feet and in the Injun sand.

On the Brown, Goshorn and Swann tract in Henry district, Clay County, the United Fuel Gas Co. completed No. 4,276 at a depth of 1,925 feet, in the Injun sand, and it will make a small gas well. In the same district, the Pure Oil Co. drilled No. 3 on the J. A. Horan and others farm in the Big Injun sand at 2,090 feet and it is also a small gas well.

In Gilmer County, A. E. Ellis and others completed a test on the George H. Bush heirs' farm on Bull Fork of Tanners Run, DeKalb district, and it is estimated good for 1,000,000 feet a day from the Injun sand at 2,137 feet. In Glenville district, the Carnegie Natural Gas Co. drilled a second well on the Roy Hiner farm and it is a very small gasser in the Big Injun at 1,945 feet.

The Cannelton Fuel Co. completed No. 14 on the Cannelton Coal Co.'s tract in Cabin Creek district, Kanawha County, to a depth of 3,193 feet and it is showing for a good gas well. In Marion County, the Owens Illinois Glass Co. completed a test well on the W. D. Ice farm through the Fifth sand at 3,032 feet and it will make a fair gasser. This is on Paw Paw Creek, Paw Paw district. In Mannington district, the Manufacturers Light & Heat Co. drilled No. 2,513 to a depth of 3,467 feet on the A. W. Beatty farm and it was dry in all formations. In Marshall County, the Cameron Oil & Gas Co. has a gas well on the W. A. Dowler farm, Liberty district, and the Fifth sand at a depth of 3,350 feet.

Mason County

In Mason County, the Federal Fuel Co. completed two wells. In Colonge district, this company drilled a test on the G. L. Thornton farm in the brown shale and a depth of 4,006 feet and it is showing for about 200,000 feet a day. The other was in Arbuckle district and was a test on the J. W. Williamson farm completed in the brown shale at 3,837 feet and dry in all formations. In Monongalia County, the Manufacturers Light & Heat Co. completed No. 3,455 on the J. R. Wise farm, Battelle district, to a depth of 3,583 feet and in the Bayard sand and it was also dry in all sands.

The Hope Construction & Refining Co. drilled No. 7,145 on the M. Barr tract in Grant district, Wetzel County, deeper and reached the Fourth sand at 3,338 feet. There is a fair showing of gas at 3,339 feet and the well is still drilling having reached 3,347 feet and incompleted. In Church district, same county, D. W. Null and others have a gas well in No. 3 on the W. G. Snodgrass farm at a depth of 3,425 feet. On Bull Run of Reedy Creek, Reedy district, Wirt County, Lee Batton and others completed a test on the S. L. Showalter farm in the Berea sand and it is dry.

Drilling in West Virginia

In Cabell County, W. Kirtley & Co. are rigging up on the John Sunderland farm in Grant district. In the same district, the Hamilton Gas Co. is building a rig for a second test on the Nide Hanley farm. In Sheridan district, Lincoln County, the Martin Gas Co. is moving in the tools on the Elisha Bias heirs farm, and in Jefferson district, Leonard B. Hobbs, trustee has made a location for No. 3 on the Barrett Adkins farm. In Grant district, Cabell County, the Hamilton Gas Co. has reached 2,320 feet on the Lillie Carter heirs farm and the Harshbarger Oil & Gas Co. has started building a rig for a second test on the J. A. and Oscar Conner farm. In Guyandot district, C. C. Wolfe reached 2,660 feet on the Ben Lomond Land Co.'s tract and shut down fishing for the tools. In Barboursville district, the United Fuel Gas Co. is rigging up for No. 4,310 and a test on the W. E. Bee farm. In the same district, the Hamilton Gas Co. has two wells drilling, one on the F. C. Hassey farm at 3,120 feet, and one on the C. C. Clark farm at 1,510 feet. In the same district, Ortman and Shipe are drilling at 2,000 feet on the Frank Bowden farm. In Grant district, the Hamilton Gas Co. is drilling its test on the Jennie Reynolds farm deeper and has reached 3,010 feet.

In Roane County, the United Fuel Gas Co. has reached 3,410 feet in No. 1,645 on the Presley Vineyard farm, Smithfield district, drilled deeper from an old completion. The same company is down to 1,100 feet in No. 4,089 on the H. C. Simmons farm, same district, and is building a rig for No. 4,311 on the A. V. Adams and others farm. In this district, the Central States Gas Co. has had to shut down at 850 feet on account of no water a test on the John Patton farm, and the Union Gas Co. has reached 1,925 feet on the Charles Nichols farm. In the same section, the Van Oil & Gas Co. is drilling at 1,400 feet on the C. E. Vandervender farm. In Curtis district, the United Fuel Gas Co.'s deep test on the J. M. Hinzman farm has reached 5,050 feet. In Spencer district, the Mountain State Gas Co. is in the sand in its test on the John T. Morford farm and it is expected to be completed soon. In the same section, the Ohio Valley Gas Corp. is hauling in material for a well on the R. M. Jennings farm.

SOUTHWEST PENNSYLVANIA

In Quemahoning Township, Somerset County, where the American Natural Gas Co. brought in a close to 1,000,000-foot gasser on the O. S. Miller farm near Texas School last summer, drilling has been suspended for the present with the reaching of the 2,800-foot level in a test south and west about 3 miles of the discovery well. There was no showing in the Emert well and it was abandoned. This coincides with the result in the test on the Royal Rhodes farm which reached

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Runnels County Producer Deepened

Time Extended for Tubing Big Lake Wells. Dry Hole West of Fort Stockton. Yates Pool Proration Meeting

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Dec. 1.—Deepening of the Runnels County producer, another cut in Howard-Glassock County crude by one of the purchasers in that area, an extension in time allowed for tubing the Big Lake Field's deep wells, and over 12,200 bbls. going to storage every day for the week ending November 19, were the most important features in the Permian Basin lineup of news for the past week and distribution period.

The Cosden Oil Co., through its receivers, announced a cut in crude oil from the Howard-Glasscock County pools to a flat rate of 50 cents per barrel, effective 7 a.m. November 28, making the price for sour and sweet oil alike, regardless of gravity, bringing the price from 2 to 4 cents per barrel under the present posted price for sour oil and 16 cents per barrel under the posted price for sweet oil. This affects over 6,000 bbls. per day, and may be responsible for other purchasers cutting the posted price in the pool. Cosden Oil Co. is running 975 bbls. per day from the Penn Pool, Ector County, the oil being transported through the Magnolia Petroleum Co.'s line which runs near the pool from Winkler County and through Howard County near the Cosden refinery at Big Spring, where it is delivered. This 975 bbls. is Cosden Oil Co.'s own production and will help to protect the company in case connected producers in the Howard-Glasscock County pools ask to be disconnected. The company explained its cut as due to general conditions now prevailing in the industry, and particularly the prices it is able to obtain for its refined products, making it necessary to obtain crude at cheaper prices to keep the refinery at Big Spring in operation. It invited the producers to continue their runs at the lower figure. Daily average production of the two counties is now around 26,500 bbls. per day. The Shell Petroleum Corp., Humble Oil & Refining Co. and Col-Tex Refining Co. are the other major purchasers in the pools. The Richardson Refining Co., Great Western Refining Co. and Big Spring Refining Co., all at Big Spring, operating on crude from these fields may now be led to adopt the same schedule as the Cosden Oil Co. receivers have set, as likewise the major purchasers mentioned above.

New Yates Proration

At a meeting of Yates Pool operators in Dallas December 2 proration was extended another six months from January, new nominations totaling 89,500 bbls. to be distributed as follows: Shell Petroleum Corp., 19.503 daily; Gulf Production Co., 12,443; Illinois Pipe Line Co., 36,544; Humble Oil & Refining Co., 21,000. This outlet is for period from December 5 to January 25. The Railroad Commission will be asked for an outlet of 100,000 bbls. daily from the field from January to April and 120,000 feet daily after April 1. John R. Suman, Humble Oil & Refining Co., was chairman of the meeting.

The Railroad Commission issued a new order extending its original order of August 26, 1930, on the Crane-Upton areas for a period of 60 days from November 25. Crane County is producing a little over 27.000 bbls. per day and Upton County over 7.000 bbls. per day.

Three members of the Railroad Commission signed an order granting a 30-day extension until December 15 for the completion of tubing the seven deep wells in the field. Two are already tubed. These are: Big Lake Oil Co.'s No. 2-C which was the first well tubed, and Group No. 1 Oil Corp.'s No. 3-B University. Big Lake Oil Co.'s No. 3-C was rigging up to run 3-inch tubing, and Group No. 1 Oil Corp.'s No. 2-B is to be rigged up to deepen after killing present production. Big Lake Oil Co.'s No. 4-C set another peak in production this week when it produced slightly better than 4,361 bbls., gauging an average of 4,170 bbls. per day for the week.

The Vacuum Oil Co. and others deepened their No. 3 McMillan in Runnels County this week from 2,513 to 2,517 feet increasing the production from around 10 bbls. per day to an estimated 150 to 200 bbls. This well has been pumping for over two years, the initial production of the well gauging around 100 bbls., but gradually slumping off from this amount to 10 bbls. and less per day. Two offset wells have been plugged long since, and other wells in this area failed to pick up the pay found in this well, and the owners had decided to plug the well before it was deepened, but deepened it as an experiment, which was a lucky move. A small line serves the field, running to Benoit on the Santa Fe Railroad where the production was formerly shipped out by way of tank car. Gravity of the oil is 42. L. Ladd and others drilled in the discovery well in the pool and shortly after completion of the well sold a half interest in it and the block to the Vacuum Oil Co. which has been producing the lease, which is located in the Domingo Diaz Survey, about 10 miles northeast of the town of Ballinger.

Two old small producers in the Ira Field, Scurry County, which were completed in 1924 and 1926, were plugged back to air this week in order to use this air for pumping other wells in the pool. The first well plugged back was the Northwest Oil Co.'s No. 1 Welborn, which was completed on July 16, 1924, at a total depth of 3,490 feet after topping the pay at 3,390 feet. It was plugged back to 3,434 feet and shot with 60 quarts from 3,380-3,420 feet before being completed the first time, and this week was plugged back to air at 1,059 feet. No. 1-A Welborn, owned by the same company, was completed on June 22, 1926, after topping the pay at 3,392 feet and drilling to 3,402 feet. It is now plugged back to air at 1,290 feet. Neither well has been producing any oil for some time. The field is producing only about 9 bbls. per day. Cold air is produced in these wells and is used in pumping other wells that are making a little oil.

The California Co. also completed an old producer this week in its No. 8 Morrison (Lease 2) in Mitchell County. This well was completed August 3, 1924, at a total depth of 3,030 feet with an initial production of 140 bbls., but is now dry and abandoned.

The Magnolia Petroleum Co. completed an old producer in this county during the week, its No. 1 Womack, which was completed December 25, 1926, for an initial production of 35 bbls. at a total depth of 3,105 feet after receiving two shots. Top of the pay was logged at 2,598 feet.

The Humble Oil & Refining Co. began plugging its No. 1-B Thompson in Section 98, Block OW, approximately 14 miles west of Fort Stockton in Pecos County, this week when it reached a total depth of 3,575 feet in anhydrite. It formerly had a showing of gas at 2,060 feet, a showing of oil and water at 2,270-80 feet and another showing of oil and gas at 2,350-73 feet. This dry hole crosses off another possible producing area in Pecos County, which county has seen its share of interesting oil and gas showings which failed to produce, and also its share of dry holes.

During the week ending November 19 crude oil was run to storage in the Permian Basin at the rate of 12,279 bbls daily, whereas the previous week a daily average of 23,405 bbls. was withdrawn from storage. This is the first period in several weeks in which oil has been run to storage in the district. An increase in production and a decline in distribution was responsible for this reversal. Trunk lines carried a daily average of 254,918 bbls., tank cars carried 20,722 bbls. per day and 20,456 bbls. were run to local refineries. Total daily production averaged 265,919 bbls.

C. R. Pope and others' No. 1 Swann, which extended production about 1 mile northwest in Jones County a few weeks ago, has been swabbing once each day, putting an average of 60 to 65 bbls. of oil in the tanks in 30 minutes' time. There are now 1,125 bbls. in storage. C. C. Julian is reported to be laying a 3-inch line from this well to the Phillips Petroleum Co.'s loading rack at Trent, a distance of approximately 3½ miles. The oil will be shipped out by tank car if a purchaser can be found to take it.

Eastland Oil Co., Dunnigan and Shell Petroleum Corp.'s No. 1 Taylor, a west offset to Dunnigan and Shell Petroleum Corp.'s No. 1 French, the discovery well of this area in Taylor County, is evidently a dry hole as at 2,384-88 feet it topped a sandy lime and picked up a hole full of water from 2,403-05 feet which is the regular Dunnigan pay horizon. However, it will be drilled deeper in hopes of making a producer out of it.

Adams, Ferguson and Lowe's No. 1 Hobbs, a little to the south of the above mentioned well, Taylor County, has been completed as a 500,000-foot gas producer from 2,299-2,301 feet. Total depth is 2,560 feet.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended December 1

Company, well, farm name, section and block—	Remarks—
ANDREWS COUNTY	
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Cleaning out; total depth 4,613 ft.
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor. Sec. 24, School Blk. A-46	Spudding.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,235 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Drlg. 2,425 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.
CONCHO COUNTY	
Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120 ft.	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of aint Rock	Shut down 1,520 ft.
CRANE COUNTY	
Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Drlg. by tools; making estimated 7,000,000 ft. gas and spraying 25 bbls. oil per day; total depth 4,488 ft.
Cranfill Bros.' No. 1 Muir, 330 ft. from N and 2,310 ft. from W. Sec. 23, Blk. B-37, Public School Land	Run 6⅝-in. casing; total depth 3,773 ft.
CROCKETT COUNTY	
Dieringer et al's No. 1 Banscorew estate, 330 ft. from N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur.	Drlg. 225 ft.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur.	Swabbing and bailing 6 bbls. oil per day; total depth 2,056 ft.
Taylor-Link Oil Co.'s No. 1 Mary Bullock et al, 330 ft. from N and E of Sec. 41, T.C. Sur.	Drlg. 965 ft.
CULBERSON COUNTY	
Cranfill Bros. and Sholts' No. 1 Seay, 2,310 ft. from S and W. Sec. 45, Blk. 60, Public School Land	Location.
Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E. Sec. 20, Blk. 89, Public School Land	Shut down 1,520 ft.; show oil 1,400-15 ft.
Kornrumpt et al's No. 1 Garren, 330 ft. S and W. Sec. 15, Blk. 79, Public School Land	Drlg. 1,150 ft.

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WEST TEXAS PRODUCTION
Week Ended November 29

County—	No. wells	Bbls.
Andrews	2	234
Crane	370	27,475
Crockett	49	1,780
Ector	74	5,970
Fisher	8	1,710
Garza	0	27
Howard-Glasscock	531	26,790
Irion	7	75
Jones	73	1,405
Loving	32	2,839
Mitchell	148	2,100
Pecos	519	104,245
Reagan	253	25,840
Runnels	3	11
Scurry	5	7
Taylor	3	129
Upton	252	7,360
Ward	46	3,510
Winkler	592	56,515
Total this week		268,022
Total last week		268,619
Decrease		597

COMPLETIONS IN WEST TEXAS

Loving County

The California Oil Co.'s No. 3 Reagan and McElvain, top pay 4,220 feet, shot 150 quarts 4,195-4,233 feet, initial production 175 bbls., total depth 4,238 feet.

Menard County

Panhandle Refining Co.'s No. 2 Eckhart, initial production 500.000 feet of gas at 2,495 feet, total depth 3,200 feet.

Mitchell County

Magnolia Petroleum Co.'s No. 1 Womack, completed December 25, 1926, top pay 2,598 feet, total depth 3,105 feet, plugged back to 2,617 feet, shot 60 quarts 2,598-2,617 feet, second shot 150 quarts 2,598-2,617 feet, initial production 35 bbls., now plugged and abandoned. The California Oil Co.'s No. 8 Morrison (Lease 2), completed August 3, 1924,

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Special Rules for Panhandle District

Wichita Falls Operators Trying to Work Out Adjustments. Good Well in Northern Stephens County. Dry Hole in Jacobs Area

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Dec. 1.—Special rules were issued by the Railroad Commission on November 25 for the Panhandle district with the idea of preventing waste above and underground. Individual leases are to be regarded as individual units and daily potential of the leases shall be considered their 24-hour capacities. The umpire may arrive at the potential in such manner as he sees fit, using two, four or six-hour gauges to determine the 24-hour potential. All wells making 12 bbls. or less will be allowed to produce 100 per cent and the daily proratable portion of allowable oil will be that above 12 bbls. per well based on the potential of the field and prorated into the total allowable of 64,616 bbls. for the district. New offset producers are limited in production to the amount of oil which is produced by their offsets, and other new wells in the district are limited to 50 bbls. per day. The new allowable is given a flexible rule by which further market demand may increase the output.

Wichita Falls District

Effective December 1, the Simms Oil Co. announced it would discontinue purchasing oil in North Young and South Archer Counties, thereby disconnecting from 461 bbls. daily production and causing more discouragement for the Wichita Falls district, which has had plenty to contend with during the past year in regard to finding purchasers for its oil.

Daily average runs to local refineries in the Wichita Falls district during the week ending November 25 was 31,168 bbls. Of this amount approximately 11,500 bbls. were sold at posted prices and the remaining 19,600 bbls. resold under the marked price.

Wichita Falls operators are trying to work out adjustments in that district to even up the underconnected and overconnected lines. Each lease is to get the marginal limit of 4 bbls. per well plus 60 per cent of the balance. Gathering charges remain as obstacles to success of the adjustment plans, but overconnected companies may give up this charge temporarily to help out the badly muddled situation. E. H. Eddleman of the American Refining Properties, Wichita Falls, was elected chairman of the district's proration advisory committee.

The new allowable for the Wichita Falls district is 52,395 bbls. daily according to nominations of the pipe line companies serving this district and the advisory committee has been working to bring down daily production in the district to meet these nominations.

Taconian Area Test

The Empire Gas & Fuel Co. completed a 33,500,000-foot gasser in the Taconian area, western Gray County, this week in its No. 1 Frashier, which is in the SE of Section 177, Block 3, I.&G.N. Survey. The company's east offset to the discovery oil producer of the area has not yet been completed. It is in Section 136, Block 3, I.&G.N. Survey, an east offset to Cree-Hoover and others' No. 1 Sullivan. The discovery which came in for an initial production of around 9,000 bbls. per day about three months ago.

On December 1 the Prairie Oil & Gas Co. withdrew as a purchaser in the Shaw-Kissinger Pool in Young County. The Stanolind Crude Oil Purchasing Co. has a line into the area, but it is not known if it will take over connections given up by the other company.

Jacobs Area Dry Hole

W. B. Hamilton completed another dry hole in the Jacobs area northwest of Pilot Point, southeastern Cooke County, this week. This is his No. 2 Jacobs, 838 feet from the south and 150 feet from the west of the west 40 acres of the south 90 acres of the Jacobs farm in the John Strickland Survey, Abstract 92. The test was abandoned at a total depth of 1,600 feet. Practically all activity in this pool has been discontinued, and surrounding dry holes make it appear as an exceptionally small pool.

Sinclair Oil & Gas Co.'s No. 1 Moran, in the northern part of Stephens County in the Ranger district, is numbered with the best, if not heading the list of the best producers in that district. It has been producing since March 24, 1923, making a total of 1,223,478 bbls. up to October 25, 1930, and flowing an average of around 273 bbls. per day at present. Several wells have been completed around this remarkable producer, but none can compare with it, and several have been plugged and abandoned.

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

Young and others' No. 1 Langford, dry and abandoned, total depth 1,429 feet. L. T. Burn's No. 1 Pastusck, location abandoned. C. S. Cade's No. 1 Barry, dry and abandoned, total depth 774 feet. H. H. Fraser's No. 1 Long and Harry, dry and abandoned, total depth 1,351 feet. Gilliland and others' No. 5 Dymank, location abandoned. Lincoln and others' No. 1 Kovar, dry and abandoned, total depth 1,443 feet.

Baylor County

Consolidated Oil Co. and others' No. 20 Portwood, top pay 1,370 feet, initial production 85 bbls., total depth 1,414 feet.

Cooke County

Hamilton and others' No. 2 Jacobs, top pay 1,493 feet, initial production 6 bbls., total depth 1,610 feet. Deep Rock Oil Co. and Finch Oil Corp.'s No. 1 Purcell, dry and abandoned, total depth 1,580 feet. D. L. Edminston's No. 1 Hinschied, dry and abandoned, total depth 1,841 feet.

Young County

Belknap Cattle Co.'s No. 2 fee, oil sand 655-65 feet and 696-99 feet, initial production 116 bbls., total depth 699 feet. Glover and Wall's No. 7 Johnson, dry and abandoned, total depth 702 feet. Martin & Maer's No. 1 Smedley, dry and abandoned, total depth 925 feet. J. J. Moran's No. 1 Howard, oil sand 906-14 feet, initial production 45 bbls., total depth 919 feet. Petroleum Producers Co.'s No. 4 Graham, oil sand 686-95 feet, initial production 22 bbls., total depth 695 feet. The Texas Company and McCanna's No. 2 Finch and others, oil sand 660-71 feet, initial production 215 bbls., total depth 671 feet. The Texas Company and McCanna, oil sand 719-31 feet, initial production 360 bbls., total depth 731 feet. J. F. Hart's No. 1 Watson, top pay 462 feet, initial production 4,000,000 feet of gas, total depth 585 feet. Smith and Shamblin's No. 1 Bullock, dry and abandoned, total depth 700 feet.

Wichita County

Boardman and others' No. 1 Powell, dry and abandoned, total depth 1,531 feet. Bridwell Oil Co.'s No. 1 Waggoner, dry and abandoned, total depth 900 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Empire Gas & Fuel Oil Co.'s No. 1 Sims, dry and abandoned, total depth 3,590 feet. Plains Holding Co.'s No. 1 McConnell, initial production 42,000,000 feet of gas from 2,410 feet, total depth 2,650 feet.

Gray County

Empire Gas & Fuel Oil Co.'s No. 1 Frashier, top pay 2,250 feet, initial production 33,500,000 feet of gas, total depth 2,610 feet.

Wheeler County

Upham Gas Co.'s No. 3 Williams & Laycock, top pay 1,830-40 feet, shot 30 quarts, initial production 1,500,000 feet of gas, total depth 2,025 feet. McGee and others' No. 1 Jolly, dry and abandoned, total depth 2,305 feet.

Hutchinson County

Huber Petroleum Co.'s No. 1 Johnson Brothers (Pure), total depth 3,109 feet, plugged back to 2,890 feet, shot 370 quarts 2,362-2,512 feet, initial production 4,500,000 feet of gas. Sinclair Oil & Gas Co.'s No. 1-C Johnson Brothers, total depth 3,143 feet, plugged back to 3,132 feet, top pay 3,108-14 and 3,116-32 feet, shot 60 quarts 3,070-3,122 feet, initial production 25 bbls.

Moore County

Texas Interstate Pipe Line Co.'s No. 1 Sneed, Jr., initial production 8,000,000 feet of gas from 2,440-2,540 feet, total depth 2,550 feet.

COMPLETIONS IN RANGER DISTRICT

Brown County

Rector Oil Co.'s No. 1 Baker, dry and abandoned, total depth 1,596 feet.

Callahan County

Hornbeck and Terry's No. 1 Terry, gas sand 560-64 feet, initial production 281,000 feet of gas, total depth 564 feet.

Coleman County

Crabb and McNeal's No. 1 Henderson, dry and abandoned, total depth 395 feet. Meredith and Horrman's No. 1 Morris, gas sand 1,667-79 and 1,680-87 feet, initial production 1,126,272 feet of gas in 30 minutes, total depth 1,705 feet. Galt-Brown and others' No. 3 Stewardson, gas sand 1,559-73 feet, initial production 3,376,000 feet of gas and 609 pounds of rock pressure, total depth 1,602 feet. Gibson, Payne and Clark's No. 2 Rogers, gas sand 2,036-37 feet, initial production 8 bbls. oil and 30 bbls. of water, with 1,000,000 feet of gas, total depth 2,092 feet.

Eastland County

Mook-Texas Oil Co.'s No. 12 Sibley, gas sand 851-73 feet, initial production 1,240,000 feet of gas, 240 pounds rock pressure, total depth 875 feet. Belva Oil Co.'s No. 1-A Goad (recompletion), total depth 3,737 feet, initial production 15 bbls. from black lime at 3,430-76 feet. Lone Star Gas Co.'s No. 1 Smith, top gas sand 3,815-28 feet, initial production 376,000 feet of gas, total depth 3,875 feet.

Erath County

McCarter and others' No. 1 Cage, total depth 3,423 feet, plugged back to 3,385 feet, shot 180 quarts 3,220-90 feet, shot 20 quarts 3,290-3.370 feet, shot 60 quarts 3,370-85 feet, initial production 706,000 feet of gas with 980 pounds rock pressure.

Stephens County

Vacuum Oil Co.'s No. 1 Coody, dry and abandoned, total depth 3,335 feet.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending December 1

CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Empire G. & F. Co.'s No. 1 Jordan et al, C SE, Sec. 94, Blk. 4, I.&G.N. Sur.	Fishing 1,900 ft.
Gibson Oil Corp.'s No. 1 Foster & Co., C NW, Sec. 24, Blk. 7, I.&G.N. Sur.	S.D. 2,490 ft.
Krebs & Barnard's No. 1 Barnard, 660 ft. S and W, NW, Sec. 24, Blk. 4, I.&G.N. Sur.	Drlg. 1,600 ft.
Lone Star Gas Co.'s No. 1 McConnell, C SE SW, Sec. 65, Blk. 4, I.&G.N. Sur.	Drlg. 605 ft.
Magnolia Pet. Co.'s No. 1 Burnett, 330 ft. N and W, W½ NW, Sec. 101, Blk. 4, I.&G.N. Sur.	Drlg. 2,110 ft.
North American O. & G. Co.'s No. 1 Polling, 1,320 ft. N, 1,500 ft. E, Sec. 24, Blk. Y-2, T.T.R.R. Sur.	Spudding.
Plains Holding Co.'s No. 2 McConnell, C S½ NE, Sec. 46, Blk. 4, I.&G.N. Sur.	T.D. 2,300 ft; set 8-in. csg.
Plains Holding Co.'s No. 3 McConnell, N¼ NW, Sec. 46, Blk. 4, I.&G.N. Sur.	Rigging up.
Ryan Cons. Oil Co.'s No. 1 Jordan-Brown, C N½ E½ NE, Sec. 83, Blk. 4, I.&G.N. Sur.	Bldg. rotary rig.
North American O. & G. Co.'s No. 1 McEwen, C SE, Sec. 1, Blk. 4, I.&G.N. Sur.	Drlg. 2,505 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, C W 100 ac., SW, Sec. 84, Blk. 5, I.&G.N. Sur.	Drlg. 2,000 ft.

CHILDRESS COUNTY

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	S.D. 510 ft.

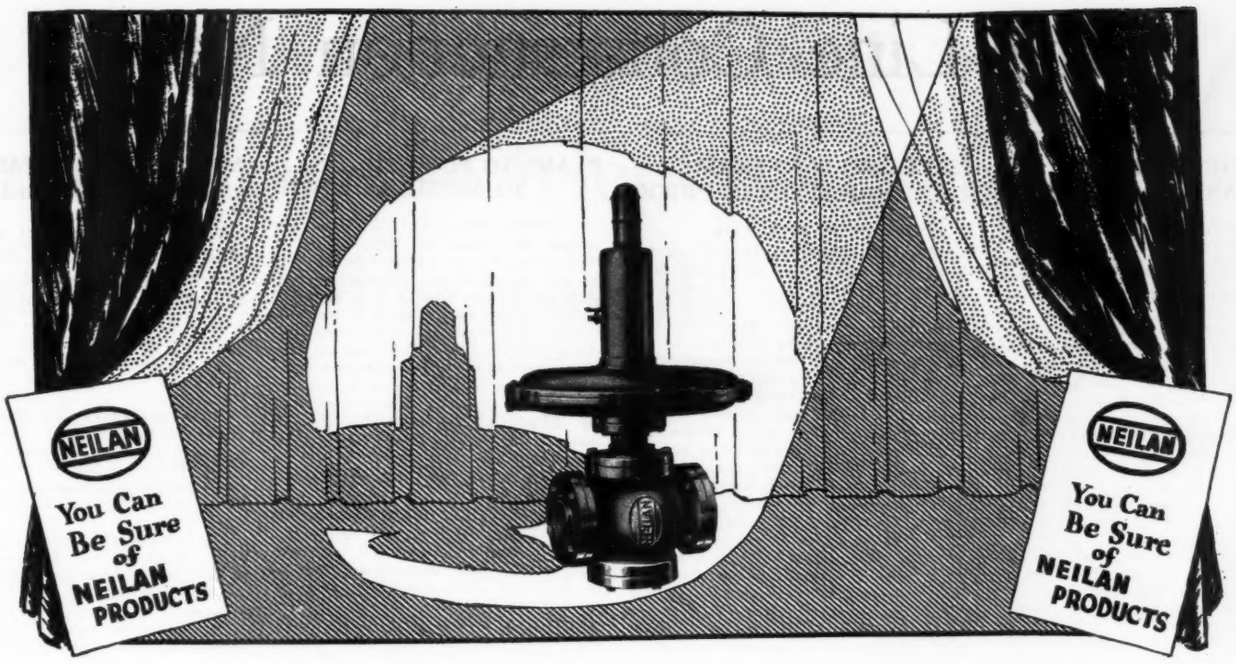
GRAY COUNTY

Adams, Prince et al's No. 1 Morse, 330 ft. NE SE, Sec. 6, Blk. 26, H.&G.N. Sur.	Spudding.
Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.&G.N. Sur.	G.W. pay 2,912-15 ft; C.O. after 500-qt. shot; S.D. 2,915 ft.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Smith, 330 ft. S and E, NW, Sec. 138, Blk. 3, I.&G.N. Sur.	Location.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 135, Blk. 3, I.&G.N. Sur.	Drlg. 2,490 ft.
Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur.	Spudding.

(Continued on Page 124)

NORTH TEXAS PANHANDLE
Week Ending November 29

Panhandle district—	Bbls.
Carson County	5,660
Hutchinson County	13,560
Gray County	53,170
Moore County	280
Potter County	0
Wheeler County	410
Total production this week	73,080
Total production last week	75,868
Decrease	2,788
Wichita Falls district—	
Archer County	13,295
Baylor County	964
Clay County	651
Cooke County	2,920
Foard County	135
Jack County	1,615
Haskell County	35
Montague County	6,106
Throckmorton County	711
Wilbarger County	17,040
Wichita County	21,961
Young County	12,510
Total production this week	77,943
Total production last week	77,696
Increase	247
Ranger district—	
Brown County	5,150
Callahan County	3,020
Coleman County	2,875
Comanche County	1,060
Palo Pinto County	444
Eastland County	4,021
Shackelford County	5,211
Stephens County	5,346
Total production this week	27,127
Total production last week	27,223
Decrease	96



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Pipe Line Construction News

TRI-CITIES UTILITIES PLANNING REGINA LINE

TORONTO, Ontario, Nov. 29.—Tri-Cities Utilities, Ltd., headed by C. O. Moore, which recently closed a contract to supply the City of Regina with natural gas from Alberta fields, proposes to start work immediately on a project to represent an expenditure of approximately $20,000,000. The initial expenditure, however, will be about $14,000,000.

The undertaking will involve the construction of a pipe line from the Kinsella Field, the western extension of Wainwright, to Regina, a distance of 357 miles. In addition, the company contemplates a further extension of 32 miles to hook up with Moose Jaw.

In order to obtain sufficient natural gas to take care of its requirements Tri-Cities has entered into a contract with the S. & D. Contracting Co. to drill several wells in the Kinsella Field, according to John L. Daugherty, a member of the firm, who thought at least 12 would be required.

The project is purely a gas proposition so that comparatively shallow wells will be put down to depths of approximately 2,000 feet. It is expected that the proposed program of Tri-Cities Utilities will create new interest, both in the Kinsella Field and the Wainwright district as a whole.

The Wainwright structure has already proved its merits as a gas producing area. Unlike the wet gas from the Turner Valley, Wainwright's gas is dry and of the "sweet" variety. Practically all wells put down on the Wainwright structure in the search for oil produced large quantities of dry gas, the largest of which was brought in by the Wainwright Oils, Ltd., with a flow of 40,000,000 feet. While use was made of some of the gas for well drilling purposes, the greater part was allowed to flow into the air.

According to information received interests associated with Turner Valley production were unsuccessful bidders for the Regina contract, with the result that a gas supply from this source was not available to the Tri-Cities Utilities, and the latter company had to look elsewhere for its gas. It is understood that the price to be paid at the well for gas will be between 5 and 6 cents per 1,000 feet.

AJAX LINE FILLED

The double 10-inch pipe line of the Ajax Pipe Line Co. from the vicinity of Glenn Pool in southern Tulsa County to Alton, Ill., has been completed and filled with oil. It has a minimum capacity of 65,000 bbls. of oil a day and will take the high lubricating content Oklahoma City crude via the Oklahoma Pipe Line Co. and Glenn Pool to the Standard Oil Co. of New Jersey, via the Ajax.

UNION'S NEW PUMP STATIONS

BOLIVAR, N. Y., Nov. 29.—The executive committee of the Union Pipe Line Co. has finished the inspection of the new brick and steel Union Pipe Line pump stations recently erected in Bolivar, Allentown and South Bolivar. The lines are connected to several thousand wells in Allegany County and furnish 85 per cent of the crude refined at the big Sinclair plant in Wellsville.

HUMBLE LINE TO VAN

FORT WORTH, Tex., Dec. 1.—The Humble Pipe Line Co. has approximately 50 miles of 10-inch line welded and laid on its crude oil line which is being constructed from the Van Field, Van, Tex., to Moore Station near Shreveport, La. The tank farm, pump station and camp is in process of construction on the Ruth Star Blake farm in the Van Field.

STEEL SELLERS FIGURE ON MATTER OF PRICES

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 1.—Of late steel sellers have been addressing themselves very seriously to the matter of prices. While there is no thought of attempting to make price agreements it is feasible for all sellers to adhere to full prices, which are readily ascertainable. Each commodity or group of commodities has its own marketing conditions as there are some producers of only a single finished steel product, others producing a few. Prospects for holding prices are better in the "heavy rolled products" or bars, shapes and plates, than in several other products, like wire, sheets and strips. November 10 the Carnegie Steel Co. announced its adherence to 1.60 cents on bars, shapes and plates, and all other producers appear to have fallen in line. This was not an open advance, but was an effort to bring the whole market up to the open figure, eliminating shading. The price is made only on current business, or deliveries to the end of the year, and there is a chance that an advance will be undertaken for the first quarter.

In sheets and strips mills have already quoted prices for first quarter, representing no advance but rather the lower prices recently going and not the full asking prices. In the case of automobile sheets there is what might even be called a reduction, the price being 3.30 cents. Black sheets are named at 2.35 cents and galvanized at 3.00 cents, while hot rolled strips are 1.65 cents to 1.70 cents, according to tonnage, on 6-inch and narrower, and 1.55 cents to 1.60 cents on over 6-inch, with cold rolled at 2.25 cents to 2.35 cents. Standard pipe prices have been steady right along.

MISSOURI VALLEY LINE NEARING COMPLETION

FORT WORTH, Tex., Dec. 1.—Out of the 637.18 miles of 24-inch gas pipe line to be laid by the Lone Star Gas Corp., North American Light & Power Co. and United Light & Power Co. from the Texas Panhandle gas fields to Nebraska and Iowa, there remains only 136.99 miles to complete. This line is called the Missouri Valley pipe line.

Nineteen miles will soon be completed on the 115-mile stretch from Plattsmouth Bridge to Ogden, Iowa, and this will finish the eastern section of the project. Two crews are working on this section, one coming south from Ogden and the other crew working north from Pacific City. The 57-mile line from Leshara, Nebr., to Sioux City, Iowa, is also nearing completion.

The Lone Star Gas Corp. obtained the natural gas franchise of Council Bluffs, Iowa, on October 21, the first large city in Iowa to vote for natural gas, and a construction crew of from 350 to 530 men working under the supervision of Dan Taylor, distribution superintendent of the Dallas Gas Co., is relaying mains in the city and enlarging and overhauling equipment preparatory to changing over from manufactured to natural gas when the line from the Panhandle is completed.

PIPE LINE REPLACEMENT

Marmarth, N. D., reports that the Hope Engineering Co. will be at work soon laying gas line east from Bowman to Hettinger, and replacing the small gas pipe west of Marmath to the wells with larger pipe. The crew now working on the Canadian border will be brought to Marmarth for the work.

PLANS TO FURNISH GAS TO MONTANA TOWNS

CASPER, Wyo., Nov. 29.—The Municipal Gas Corp. of Minneapolis has filed its application with the Great Falls council for a 30-year franchise to furnish natural gas to that city. The rates stated in the application are from 10 cents to 2½ cents under the rates being charged by the Great Falls Gas Co. The Municipal Gas Corp. does not state where it intends to obtain its gas supply but its officials say they have a large supply of natural gas contracted for and that the distribution system and a full gas supply will be in service at the expiration of six months from the granting of the franchise.

In Minot, N. D., the Montana-Dakota Power Co. has asked the city commission for a franchise to serve the city with natural gas. This city already has an artificial gas plant operating under the name of the Minot Gas Co. and the Montana-Dakota Power Co.'s officials announced that they had endeavored to purchase this plant, but had failed to reach an agreement. The Minot commission set December 19 as the date for the hearing and, if successful, the Montana-Dakota Power Co. will lay a line from Blaisdell, N. D., to serve Minot. This stub line will connect at Blaisdell with the present 12-inch line of the company from the Baker Glendive gas field in Montana.

At Bozeman, Mont., the city council granted franchises to both the Montana Power Co. and the Billings Gas Co., after the recent election voted that the city should give franchises to some gas company for natural gas service. The Montana Power Co. is at present lining up a system it hopes to complete next summer and which includes the cities of Butte, Anaconda, Helena, Livingston, Bozeman and Deer Lodge. The company has secured franchises so far in all the cities except Deer Lodge.

MAY BUILD 16-INCH GAS LINE TO NEBRASKA TOWNS

The Public Service Corp. of Nebraska, said to be a subsidiary of the Keystone Pipe Line Co. of Fort Worth, Tex., is considering the construction of a 16-inch natural gas pipe line from the Hugoton Field in Stevens County, Kansas, to points in Nebraska and Wyoming, according to reports in circulation in the Mid-Continent area. The line, if constructed, would extend to McCook, North Platte, Sidney and Scotts Bluff, Neb., and to Torrington, Wyo., according to these reports. William Horwitz of the Keystone Pipe & Supply Co. of Fort Worth, Tex., is president of the Public Service Corp. of Nebraska.

UNITED PURCHASE EXPLAINED

Acquisition by the United Gas Corp., controlled by Electric Power & Light, of the Southern Natural Gas Corp.'s branch pipe lines to Bogalusa, La., and to Canton, Laurel, Hattiesburg, Gulfport and Biloxi, Miss., is described as a logical expansion of its present natural gas interests in that territory. The United Pipe Line Co., a subsidiary of United Gas Corp., will be in a position to draw gas immediately from the Jackson gas field, which Southern Natural Gas Corp. could not do in substantial amounts at this time because of its gas supply contracts in the Louisiana fields. Southern Natural Gas Corp. will benefit by increasing its future sources of gas supply through a contract with United which will provide for an exchange of gas between the parties.

MISSISSIPPI COMPANIES IN NEW CONSOLIDATION

Further consolidation of natural gas distributing properties in the State of Mississippi was announced with the acquisition by Peoples Light & Power, a unit of Tri-Utilities Corp., of all of the gas distributing properties of Southern Cities Public Service in that State as well as of the Mississippi Natural Gas Co.

Southern Cities Public Service is controlled by Central Public Service Corp., the A. E. Peirce utility holding company, while Mississippi Natural Gas is at present affiliated with Southern Natural Gas Corp., already affiliated with Tri-Utilities.

These properties supply gas to Meridian, Columbus and Hattiesburg. The corporation, it was announced, has also acquired the natural gas distribution properties of Mississippi Natural Gas Corp., which are now in operation and those under construction. The properties of these two companies will be owned by Mississippi Public Service Co., a subsidiary of Peoples Light & Power Corp., in order to concentrate their management and effect operating economies, as well as facilitate the development of natural gas markets in that territory. Southern Natural Gas Corp. has an exclusive contract to supply most of the above properties with their natural gas requirements.

Another acquisition by Peoples Light & Power Corp. is the Mississippi Gas Co. of the city of Laurel in south central Mississippi. This property will become a part of the system operated by the corporation's subsidiary, the Mississippi Public Service Co. Gas is supplied to domestic and industrial consumers, and the company has a contract to supply the Masonite Co. with natural gas as soon as it is available.

COMPLETE KETTLEMAN LINE

LOS ANGELES, Calif., Nov. 29.—The 22-inch steel pipe line from the Ketleman Hills district has just been completed for the Southern California Gas Co. At times, according to engineers of Robertson & Co., the Los Angeles firm that built the Ridge Route section, the mountain sides along which the pipe was laid presented grades of at least 45°. Trenches had to be dug where there was scarcely a foothold.

It was in hoisting or lowering the pipe that engineering ingenuity had its severest tests. The big steel carrier weighs 3,000 pounds to every joint and at frequent intervals valves are installed weighing 4,500 pounds each. Finding emplacements for the trench diggers and hoisters was a major achievement. Many times these were cut into solid rock along the mountain slopes.

The Ridge Route section, crossing through Liebre at Reservoir Summit and through Hungry Valley, kept the engineers, workmen and machines fighting for 60 days. It is an electric welded line and cost runs to about $1,250,000.

ARKANSAS LINE COMPLETED

Construction work has been completed on the pipe line and distributing systems for Paris, Charleston, Ozark, Ratcliff, Branch, Coal Hill, Hartman, Altus, Subiaco, Caulksville, Denning and Alix, Ark., and gas has been turned on. The construction was done by Roger O. Moore Construction Co., of Tulsa, for Franciso Brother & Co., and Parris Brothers, of St. Louis. The company has developed its own gas reserves at Coal Hill and Hartman.

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BRANCHES AND DISTRIBUTING WAREHOUSES THROUGHOUT THE WORLD

JOINER POOL EXTENDED MILE WEST REVISING ESTIMATES OF AREA

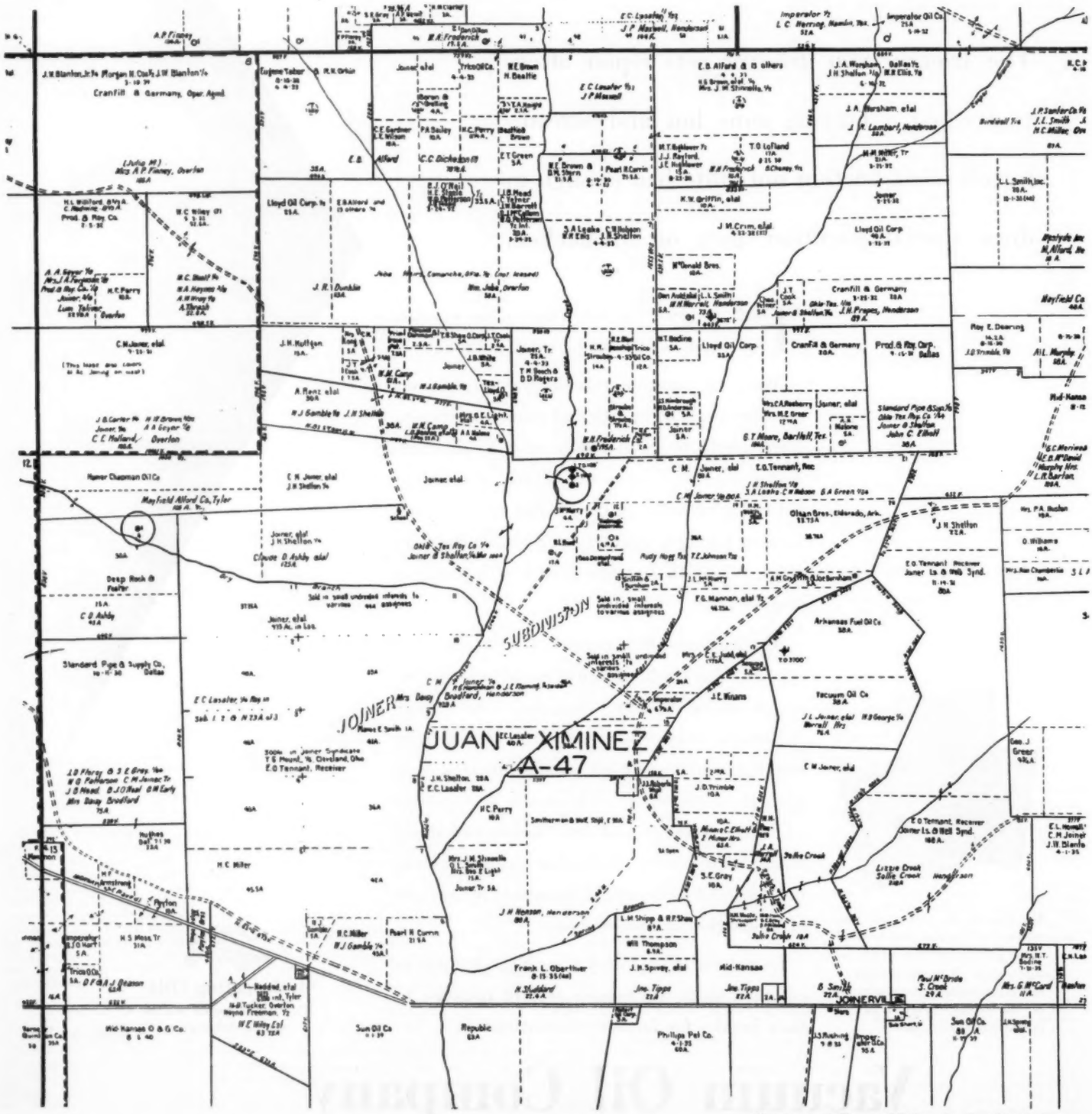
By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Dec. 1. — It now begins to look as if the Joiner Pool, central Rusk County, was to be extended approximately 1 mile to the west, and a pool of potential major importance be uncovered by Frank Foster, Deep Rock Oil Co. and others' test on the Ashby farm, 1,204 feet from the west line and 595 feet from the north line of the C. D. Ashby 75-acre tract in the Juan Ximines Survey (some maps show this as Juan Ximenes Survey). This test is almost a mile west of the C. M. Joiner discovery well on the Mrs. Daisy Bradford farm in the Ximines Survey which averaged around 170 bbls. per day during the past seven days, falling off slightly in production from the past week's average.

The Ashby test is now shut down waiting for cement to set after 6⅝-inch casing was set at 3,580 feet. Total depth of the hole is 3,614 feet, and saturated sand was topped at 3,597 feet, with several feet of good sand showing between this depth and the total depth of 3,614 feet. On a drill stem test on November 27 the well made one 20-minute flow of an unestimated amount of oil, and many are estimating the well good for 500 to 1,000 bbls. per day, but when the well is tested a better idea as to its possibilities will be known. If it proves a larger well than the Joiner producer the pool will then be considered as lying to the west of the Joiner discovery which many consider an edge well.

Two Dry Holes

Two dry holes define the area to the southeast and northeast, and it will soon be known as to whether a south offset and a north offset to the discovery well will prove more acreage in the immediate vicinity of the well. Stroube and Stroube's No. 1 Frederick, a north offset, is still shut down at 3,618 feet. It made a drill stem test from 3,506-3,618 feet, showing only three fourbles of oil and one fourble of mud, but after standing for 20 hours the hole filled 2,500 feet with fluid, mostly oil, and now looks good for a small well. Tubing will probably be run and a test made on tubing. If this well proves a producer it will extend production about 700 feet north. The test is 156 feet from the north and 500 feet from the west of the southeast



—Map courtesy Zingery Oil Map Co., Fort Worth, Tex.

Map showing Joiner Pool, Rusk County, Texas, which has again become an interesting area due to Frank Foster, Deep Rock Oil Co. and others' No. 1 Ashby striking the oil sand from 3,597-3,614 feet and making one 20-minute unestimated flow on a drill stem test, promising a western extension of about a mile. Dry holes and drilling tests are shown with discovery well marked with circle and arrow, and extension test marked with circle. Two dry holes shown north of the discovery well were not drilled to the producing horizon found in the third test which made the producer.

corner of H. Frederick's 195-acre farm in the Ximines Survey.

Anderson and others' No. 1 Bradford, 150 feet from the north and 150 feet from the east of Lot 12, in the Ximines Survey, approximately 500 feet due east of the discovery well, is shut down at 3,586 feet. It cored oil sand from 3,529-30 feet, and three drill stem tests failed to make good showing, and another test is being made.

L. H. Hunt's No. 1 Bradford, south of the discovery well, is drilling cement plug at 3,650 feet. Casing was set at 3,525 feet. Shale and broken sand was drilled in this test from 3,540 feet to around 3,570 feet and the well has been running lower than other tests in the area. The outcome of this test will probably be told within another 24 hours. It will either extend or limit production to the south.

Six and five-eighths-inch casing has been set at 3,531 feet in the Tex-Lloyd Oil Co.'s No. 1 Camp, a short distance northwest of the discovery in the Ximines Survey, and it will probably be the latter part of the week before it will be possible to tell anything about this test.

Two dry holes, and disappointing showings in the other offset wells in the Joiner area caused a big slump in interest in the area, which reflected to the disadvantage of adjoining counties in the district, but if the Ashby test comes through as a good producer, or better producer than Joiner's No. 3 Bradford, the discovery well, the area will assume a different aspect than it has during the past few weeks, and again take its place as the most interesting area in Texas, and may yet beckon to some pipe line company for a connection. The Deep Rock Oil Co. has ordered two 1,000-bbl. tanks for the test.

Anderson County Test

Humble Oil & Refining Co.'s No. 1 McGaffrey, 660 feet north and east of the northwest corner of Mrs. M. Russell's 124-acre tract in Survey 3, I.&G.N. Survey, in the Blackfoot area, Anderson County, topped Austin chalk at 4,041 feet this week and is drilling ahead at 4,257 feet in chalk. This is one of the most interesting and important tests in East Central Texas at this time as the area has been highly considered from a geological standpoint. Surface elevation of the test is 365 feet.

Reports came out on November 29 that C. M. Joiner, discoverer of the Joiner Pool, Rusk County, had sold about 4,000 acres of his Rusk County holdings to L. H. Hunt of El Dorado, Ark., who is drilling the south offset location to the discovery well, but the report has not been authenticated and consideration has not been affirmed.

Mr. Timberlake and others have completed a magnetometer survey of their 20,000-acre block of New Boston in Bowie County and have made location for their second test on the block. This will be their No. 2 Tidwell, 2,510 feet from the south and 655 feet from the

(Continued on Page 122)

EAST CENTRAL TEXAS WILDCATS

Week Ending November 29

DELTA COUNTY

D. S. Hood's No. 1 J. J. Balser, 185 feet from S and 580 feet W of Balser 40-acre tract in SE cor. T. B. Laddin Sur. ..... Drlg. 1,118 ft.

Worthington and Stedman's No. 1 W. H. Dejehett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur. ..... Shut down 595 ft.

FANNIN COUNTY

E. A. Parsons et al's No. 1 Morgan in the English Sur., 3 miles NE of Savoy ..... Shut down 3,435 ft.

E. M. Rogers' No. 1 McSwain, 300 ft. S and E of Michael Daly Sur., in Juana Telgado Sur., 1½ miles NE of Lomasco ..... Shut down 1,500 ft.

GREGG COUNTY

M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,800-ac. tract, Martin Lant Sur. ..... Shut down 2,588 ft.

J. C. Ferrell's No. 1 J. K. Lathrop, 661 feet from N and 1,194 feet from W of 96-ac. tract, William Robinson Sur. ..... Rig up.

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-ac. tract in A. York Sur. ..... Shut down 3,460 ft.

E. L. Chapman's No. 3 Cade, 1,560 ft .from N and 750 ft. W, J. B. Dorsey Sur. ..... Rig up.

Texas State Oil Co.'s No. 1 Skinner, 150 ft. from E and 150 ft. from S. J. Henshaw Sur. ..... Fishing 4,009 ft.

HUNT COUNTY

Mamie S. Hammond's No. 1 W. H. Adams, center of survey, west of Branson Sur., J. A. McFarland Sur. .... Derrick blew down.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in Finley Sur. ..... Shut down 960 ft.

POLK COUNTY

Sunshine Oil Co.'s No. 1 J. A. Collins, 313 ft. from NE 150 ft. from SE at right angles to line, A. Viesca Sur. Show oil 3,223-3,320 ft.; fishing for pipe 3,320 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

RED RIVER COUNTY

Buffington et al's No. 1 L. H. Moore, 160 ft. from S and 160 ft. from W of 100 acres, Daniel Cornelius Sur. ..... Shut down 575 ft.

Lloyd Oil Co.'s No. 1 R. H. Mace, 150 ft. from N and 150 ft. E of Mace 86-ac. tract, William Cullan Sur. ..... Drlg. 2,030 ft.

Droupleman and Bunely's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 180-ac. tract, S. B. Shi Sur. ..... Shut down 1,290 ft.

RUSK COUNTY

Stroube and Stroube's No. 1 H. Frederick, 156 ft. from N and 500 ft. from W of SE of Frederick 195 acres, Juan Ximenes Sur. ..... Drill stem test 3,506-3,618 ft.; 3 fourbles oil, 1 fourble mud; T.D. 3,618 ft.

E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parker Sur. .... Derrick.

Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E and 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.

Goodman's No. 1 Oscar Jones, 250 ft. from W and 150 ft. from N of railroad, Brown Sur. ..... Set 100 ft. of 10-in.

Omaria Meredith's No. 1 Robertson, 150 ft. N along W line of George Guthrie Sur. from SE cor. and 150 ft. W of E line of Robertson 20-ac. tract, R. H. Pinney Sur. ..... Derrick (rotary).

A. A. Malone's No. 1 G. T. Moore, 150 ft. from E and 150 ft. from S, Juan Ximenes Sur. ..... Digging pit.

Frank Foster et al's No. 1 Ashby, 200 ft. from N and 250 ft. from E of 75-ac. tract, Juan Ximenes Sur. .... Top sand 3,597 ft.; T. D. 3,614 ft.; on drill stem test made 20-minute flow; casing set 3,580 ft.

Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N and 420 ft. from E of SE cor. of B. Smith Sur. ..... Derrick.

Mass et al's No. 1 Matthews, 3,244 ft. from N, 4,366 ft. from E, Dalines Cartinas Sur. ..... Derrick down.

Rosenfield's No. 1 L. A. Pinkston, 150 ft. from N and 263 ft. from W of Pinkston 77-ac. tract, Maria V. Pena Sur. ..... Shut down 2,015 ft.

Anderson et al's No. 1 G. T. Moore, 600 ft. from E along S line of tract, Juan Ximenes Sur. ..... Derrick.

Anderson et al's No. 1 Bradford, 150 ft. from and N 150 ft. from E of Lot No. 2, Juan Ximenes Sur. .... Cored oil sand 3,529-30 ft.; T. D. 3,586 ft.

Tex-Lloyd Oil Co.'s No. 1 Camp, 150 ft. from E and 150 ft. S of 5-ac. tract, Juan Ximenes Sur ..... Set 6⅝-in. csg. 3,531 ft.

L. H. Hunt's No. 1 Bradford, 1,269 ft. W and 1,083 ft. S of SW cor. of J. T. Moore's 100 acres, Juan Ximenes Sur. ..... Drlg. plug at 3,650 ft.

Bateman et al's No. 1 Lois Della Crim, 3,083 ft. W along N line of survey of NE cor. and 400 ft. S at right angles to N line of survey, E. G. Serien Sur. ..... Top chalk 2,600 ft.; drlg. 2,650 ft.

SMITH COUNTY

Owens & Sloan Oil Co.'s No. 1 Stearns, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Sidetracking drill pipe 3,734 ft.

Sun Oil Co.'s No. 1 D. McGehee, 500 ft. W and 250 ft. S of SW cor. of Mrs. Julia Phillips 55-ac. tract, Thomas Quevado Sur. ..... Drlg. 2,637 ft.

Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Shut down 2,000 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S. W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Drlg. 3,630 ft.

TITUS COUNTY

Deep Rock Oil Co.'s No. 1 Ed McElroy, C of 100 acres, K. Lewis Sur. ..... Drlg. 2,676 ft.

VAN ZANDT COUNTY

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Cranfill & Germany's No. 1 Swain, 137 ft. N and 50 ft. from W of excess strip on W side of O. L. and L. L. Swain farm ..... Shut down 14 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abnd.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abnd.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox and A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line .... Shut down 200 ft.

Neil McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Spudding..

Humble Oil & Ref. Co.'s No. 5 R. S. Blake, 150 ft. from N and 150 feet from E of SW cor of Mrs. E. E. Carroll farm, John Walling Sur. ..... Setting surface csg.

Humble Oil & Ref. Co.'s No. 6 R. S. Blake, 150 ft. from N and 150 ft. from W of SW cor. of Mrs. E. E. Carroll farm, elevation 485 ft.; John Walling Sur. ..... Location.

J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Pecan Gap 2,420-2,442 ft.; cored 2,444-56 ft.

Pure Oil Co.'s No. 2 A. W. Ellison, 200 ft. N of S line and 225 ft. W of E line of lease, James Rase Sur. ..... Drlg. 2,957 ft.

Pure Oil Co.'s No. 3 D. R. Howell, 250 ft. S of N line and 150 ft. E of W line of lease (60 acres), Mund Gross Sur. ..... Location (rotary).

Pure Oil Co.'s No. 3 Mary P. Neil (100 acres), 225 ft. S of N line and 225 ft. E of W line of lease, James Rase Sur. ..... Location (rotary).

Pure Oil Co.'s No. 5 N. E. Clark (89 acres), 200 ft. S of N line and 225 ft. E of W line of lease, J. Prado Sur. ..... Location (rotary).

Pure Oil Co.'s No. 5 A. R. Tunnell (101.2 acres), 110 ft. E of W line and 203 ft. N of S line of lease, John Walling Sur. ..... Location (rotary).

Pure Oil Co.'s No. 2 Ella York (39.6 acres), 200 ft. W of E line and 250 ft. N of S line, John Walling Sur. ..... Location (rotary).

Pure Oil Co.'s No. 3 M. F. Shirley (38 acres), 150 ft. S of N line and 150 ft. E of W line of lease, John Walling Sur. ..... Location (rotary).

Pure Oil Co.'s No. 3 O. L. and L. L. Swain (43.8 acres), 506 ft. S of N line and 200 ft. W of E line of lease, John Walling Sur. ..... Location (rotary).

Pure Oil Co.'s No. 2 A. D. Clark, 380 ft. NW of S cor. of Mund Gross Sur., and 170 ft. SW of NW line of lease in J. Prado Sur. ..... Cement setting 2,836 ft.

Pure Oil Co.'s No. 4 N. E. Clark, 109 ft. W of W line of A. D. Clark 17-ac. lease, and 645 ft. S of N line, A. H. Wiley Sur. ..... Cement setting 2,793 ft.

Pure Oil Co.'s No. 2 J. T. Taylor, 202 ft. from W of E line and 150 ft. from S of N line, John Walling Sur. ..... Cement setting 2,659 ft.

H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 2,212 ft.

B. P. Hervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Shut down 4,601 ft.

Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.

Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. Temp. abnd. 2,987 ft.

Imperator Oil Co.'s No. 1 G. J. Luther, in SW cor. G. J. Luther 32-ac. tract ..... Plug; T. D. 3,022 ft.; will plug back; showed salt water.

Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.

Jenkins et al's No. 1 V. T. Davis, SE cor. of 139.8-ac. tract, Nacogdoches County School Land ..... Shut down 3,031 ft.; pumping 8 bbls. per day.

Pure Oil Co.'s No. 2 Mary P. Neills 100-ac. tract, 225 ft. E of W line and 658 ft. S of N line, James Rose Sur. ..... Drlg. 2,812 ft.

Pure Oil Co.'s No. 1 H. C. Gilbert 62-ac. tract, 250 ft. W of E line and 250 ft. S of N line, Mund Gross Sur. ..... Cement setting 2,475 ft.

Pure Oil Co.'s No. 1 Sam Allen, 835 ft. E of W line and midway between N and S line of lease, J. Prado Sur. ..... Shut down 2,854 ft. (rotary).

Pure Oil Co.'s No. 2 W. H. Cook, (86 acres), 675 ft. W of E line and 225 ft. N of S line, Mund Gross Sur. .... Coring 2,651 ft.

Pure Oil Co.'s No. 2 R. A. Howell (22 acres), 894 ft. N of S line and 225 ft. E of W line of tract in A. McPhail Sur. ..... Drlg. 2,027 ft.

Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick standing.

The Texas Company's No. 4 R. A. Tunnell, 335 ft. E of most easternly W line and 217 ft. S of N line of lease, John Walling Sur. ..... Drlg. 2,420 ft.

Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. .... Drlg. 1,028 ft.

Vitek Oil Co.'s No. 1 Smith, 150 ft. S and 15 ft. from W of L. A. Smith 40-ac. farm in John Walling Sur. .. Derrick.

Maud Powell's No. 1 Killam, 1,360 ft. from NW, along SW line from most S cor. of 52-ac. tract and 425 ft. NE to SW line, Jessie Russell Sur. ..... Drlg. 4,258 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

Pipe Lines Big Aid to Southwest Texas

Transporting Natural Gas to Towns Near Mexican Border Involved Overcoming Many Difficulties

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Dec. 4.—Southwest Texas is one of the last frontiers in the United States to be settled and modernized, and the oil and gas industry has probably done as much, if not more in building up the many small towns in that part of the country, than any other industry. It has done more to modernize heating, lighting and water equipment and supplies, and has brought about more construction of buildings, highways and railroads to the various new places opened by the discovery of oil or gas, or the booming of the old towns which have merely existed heretofore.

Besides doing these things for the various communities the many crews used in the production of oil and gas, on the construction crews of oil and gas pipe lines, tank farms and camps and the resultant forces of employes which are later stationed at the offices or camps, spend many thousands of dollars with the merchants of the towns and help to build them financially.

The Texas Gas Utiliites Co. operating along the United States-Mexican border is now bringing gas to the most remote villages, and a recently constructed 65-mile 10-inch electric arc-welded gas line from the Rycade gas field in Maverick County to Del Rio and the Central Power & Light Co.'s large hydro-electric power station on the Devils River approximately 18 miles north of Del Rio, is one of the largest projects in this part of Texas to help in modernizing it, and bringing the many small towns the comfort and power that gas provides. Eagle Pass is one of the larger towns along this new line which will be supplied with gas.

Line Traverses Rough Country

The terrain covered by this line is extremely rough, with mesquite, soap weed, cacti and sage growing in the rough gravel and limestone ridges practically throughout the length of the line. Considerable blasting and hand ditching had to be done in places ditching machinery and tractors could not negotiate. The accompanying pictures show conditions which had to be met in many places along the right of way. Many large and small arroyos (ravines) called for bends in the lines, and both pipe and welds underwent terrific strains in making some of the bends, and plenty of slack had to be allowed when stringing the pipe.

The N. A. Saigh Co., San Antonio, laid the line and the A. F. Day Construction Co., users of electric arc welding did all the welding on the line, under the supervision of A. F. Day, president of the company, who supervises all work done on any lines welded by his company. Mr. Day is a believer in doing his own supervision and inspecting and says that all grief from electric welding is due to contractors not knowing their work or trusting too much in their foremen and operators to carry on the best work possible.

Two welders working from same portable arc-welding machine.

"Poor work and not the process causes failures in electric welding, and the same trouble was caused when gas welding was commenced years ago," says Mr. Day. He has been in the welding business for 21 years, having the first welding machine in the State of Texas and the first electric welding machine in the State, using the first electric butt weld in Texas, this on 33 miles of gas pipe line in Winkler County for the M. & M. Gas Co.

Made Good Time on Job

There were 42 working days consumed in laying the Texas Gas Utilities Co.'s 65-mile line to Del Rio, the line tested with 300 and 500 pounds' pressure when completed. Two miles of line were welded per day, using 14 welders along the line, two welders to each Hollup portable gas engine driven arc welder. These machines are manufactured by the Hollup Corp. of Chicago, and the ones used on the line are gasoline driven, a Continental "Red Seal" 4-cylinder engine furnishing the power for driving a century generator which generates 200 and 300 amperes for a single welder or 400 and 600 amperes for two operators.

A. O. Smith double-bell thimble-sleeve pipe of 60-foot joints were used in the line, three flat cars being necessary to transport these joints via railroad to unloading point. The A. O. Smith Co. is now building special cars to haul this extra length pipe. The entire line was butt-welded.

Butt-welded, bell and spigot welds have a tensile strength of between 50,000 and 56,000 pounds, and low carbon pipe will pull apart before such electric arc-welded joints give way. The size of these welds is generally five-eighths inch in width. Compact welds in small spaces can be made by arc-weld, eliminating "rivers" and "pin holes" such as come in loose, flimsy and too rapid welds.

It is most important for a welder to know the proper filler rod to use and the proper electrodes to use for the various makes of pipe. Wanamaker electrodes were used on this 10-inch gas line, and the welds were continually being inspected for their tightness, for porous welds, when tested under high pressure, will show "sweating" which is one of the many faults that can be caused by inefficient welders. Good treatment and better pay obtains the best workmen, according to Mr. Day, and these two attributes in the employer prevent espionage and "ganging up" on a contractor or company. The best welders make about 50 welds per day on 4-inch lines, although the average is around 40 per day. Thirty welds per day are made on 6-inch lines, and about 20 per day on 10-inch lines.

Mr. Day said that he would like to see shoddy pipe line work eliminated, and that contractors would fare far better if they would make personal inspections of the work done.

Inspection Important

Inspectors were named as a cause of trouble in construction work, for some of them are not entirely acquainted with all kinds of welding, and bring forth trouble for the contracting company and their own oil or gas company.

There are three essentials in pipe line construction, according to Mr. Day. 1. The proper lining up of the pipe in order to prevent any crooked welds in the line, such welds later causing a break. 2. Proper amount of slack allowed to take care of any change in temperature that might warp or pull the line apart. 3. Strong welds which will hold under severe strain in case of the first two essentials having been overlooked in laying the line.

Many old screw lines are now being welded at the collars in reconditioning

(Continued on Page 122)

Crossing cliff with 10-inch line from Maverick into Val Verde County, Texas.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CONCENTRATING SULPHURIC ACID BY VACUUM PROCESS

A process for concentrating weak acid with indirect heat by means of hot oil in pipes has been mentioned to me and I would like to know just how this is done, if you have the information?—J. C. Y.

This may be a well-known patented process designed especially for the recovery and concentration of sulphuric acid waste. The process involves removal of the water and bringing the sulphuric acid to any selected concentration, gravity, in a closed system under vacuum by the application of indirect heat. This indirect heat is the step that makes use of a suitable oil as the medium for conveying the heat.

The reduction of the boiling point during the concentrating stage is obtained through the use of the vacuum. This brings the temperature down low enough to make heat interchange possible through the circulation of hot oils. This process has been described in the literature prepared by the owners of the patent, and these extracts have been taken from that source. The difference in boiling points, of the acid at a fixed density, under vacuum and at atmospheric pressure are illustrated. For instance, at a density of 30° Be. the boiling point at 28-inch vacuum is 120° F., while the same acid boils at 230° F. at atmospheric pressure, a reduction of 110° F. Under similar conditions the reduction in boiling temperature is 150° for 61° acid, and 180° for 66° acid.

These low temperatures make it feasible to concentrate sulphuric acid to 61° Be. with steam 45 pounds pressure, and to 66° Be. with hot oil of 500° F. There is no difficulty in constructing extra heavy lead coils to operate with a steam pressure of 45 pounds, and any high-grade lubricating oil with a flashpoint above 550° F. is suitable for circulating in the coils for the final concentration.

The acid is usually concentrated in two steps so as to permit settling of the acid at a density of about 60° Be. The weak acid is drawn by a vacuum into the preliminary concentrator, which is heated by steam at from 30 to 45 pounds pressure. As soon as a density of 56-61 has been reached the vacuum of this unit is broken and the acid is discharged by gravity into a storage tank. The settled acid is again drawn by vacuum into the final concentrator which is heated by hot oil circulated through an oil furnace of standard design. When the acid has reached a density of 66° Be. the vacuum of this unit is broken and the acid discharged by gravity into the cooler and rundown tank. When large quantities of acid are to be handled the concentrator may be operated continuously.

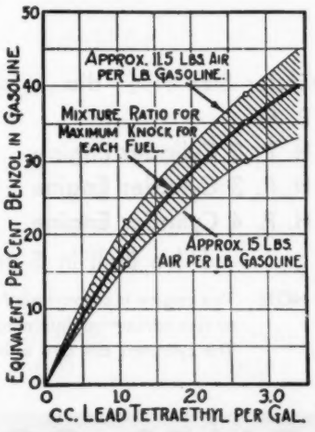
TETRAETHYL LEAD AND BENZOL KNOCK EQUIVALENTS

Could you inform me where I could get tables or graphs that would enable me to convert knock ratings of gasoline expressed in cc. lead tetraethyl to benzol equivalents?—C. R. N.

The subject of the classification of gasoline as to the tendency to knock in the motor, or what is known as knock rating, is of so recent origin that it has not been possible for the authorities to agree on a standard for expressing this property. Benzol was apparently the first material to be used as an antiknock agent so it was natural to think of this substance as a measure. However, it was soon discovered that when identical quantities of benzol were added to gasolines made from different petroleums that the results were not the same. It was concluded that knock rating in terms of benzol could have no exact meaning except where the local conditions were well known and the methods for testing standardized in every detail.

Numerous papers have been published on knock testing and many schemes proposed for presenting the data. A list of these papers may be found in Chemical Abstracts. Some extracts from the paper of Campbell, Lovell and Boyd, Ind. Eng. Chem.; 20, 1,045, 1928, may illustrate the conditions.

The several factors influencing the tendency of a motor fuel to knock may be classified under two general headings: (a) Physical—compression ratio, timing of the spark, speed of the engine, setting of the throttle, shape of combustion chamber, valve timing, efficiency of cooling temperature of jacket water, and atmospheric conditions. (b) Chemical—composition of the fuel and mixture ratio. In knock testing one customary procedure is to make comparative measurements between some standard fuel and the fuel under test. The relative tendency to knock is then expressed in terms of some one of the preceding variables which affect the tendency to knock.



The paper is illustrated by a number of tables and graphs for the purpose of showing the influence of the variables. Figure 4 illustrates how mixture ratio affects relationship between antiknock properties of benzol and lead tetraethyl. The curve here presented may in a general way serve to convert one value to the other. It must be remembered, as above suggested, that the exact values apply to the gasoline under test and by the methods described by the authors.

DISTRIBUTION ETHYL GASOLINE

We would appreciate any information showing the distribution of premium antiknock gasoline; especially where is the greatest demand for Ethyl Gasoline?—H. W.

Premium gasoline equipment, keeping pace with automotive development and new standards of motor performance, comprises nearly 44 per cent of the total pumps on leading motor highways of the country, according to the results of a survey of road conditions in 20 states announced by the Ethyl Gasoline Corp., owned jointly by General Motors and the Standard Oil Co. of New Jersey.

Using the total of Ethyl Gasoline pumps as a standard for comparison, the survey showed that on the main motor routes covered, Ethyl equipment represented 21.6 per cent, or a distribution at the rate of one Ethyl pump in every five throughout the United States.

The main motor route between Cincinnati and Cleveland produced one of the highest counts of premium pumps recorded in the survey. Nearly 54 per cent of the equipment was found devoted to high compression fuels. The lowest Ethyl distribution, estimated on equipment, was found between Corpus Christi and Laredo, Tex., where the pumps comprised but 7 per cent of the total.

Retailers report that economy of operation, better power and quicker acceleration are being demanded by drivers of light cars, and that the extension of high compression engines to lower priced lines of automobiles compels the use of better fuel.

More details concerning this survey may be found in The Oil and Gas Journal, September 25, 1930, Page 138.

LIQUEFIED GAS PROPERTIES

What is liquefied gas as sold for refrigeration and domestic fuel? Is it liquefied propane and butane? What is the pressure in the containers and how big are the containers? Is it not dangerous for domestic use? Is the process patented?—G. B.

Liquefied gas of a petroleum character was one of the earliest products of petroleum but the first efforts to establish this business were not successful. There were several causes for the early failures, among which were cumbersome containers, insufficient concentration, and the product was not of uniform composition. Within recent years our knowledge of fractionation has enabled us to devise apparatus that will extract desirable hydrocarbons from natural gas and these products may be prepared in any concentration and purity that may be required.

The product now being sold by several responsible companies is essentially pure propane that is separated from natural gas, cooled and compressed to the liquid form. The commercial product is of exceptional purity, very seldom containing more than a trace of the higher boiling fractions, such as butane.

The lighter hydrocarbons of natural gas—methane, ethane, propane and butane—are suitable for liquefied gas purposes. Butane is not a satisfactory medium for gas under all conditions. When the temperature falls below 34° F., its boiling point, it will not change to the gas form. Propane, on the other hand, will remain a gas down to —44°.

A representative liquefied gas had the composition shown in the table:

ANALYSIS OF LIQUEFIED GAS

	Per cent
Methane	0.18
Ethane	.72
Propane	98.52
Butane	.58
Specific gravity	1.534
B.t.u. per foot	2.519

This gas is usually sold in cylinders approximately 14"x44" under 150 pounds pressure. The cylinders weigh from 80 to 165 pounds and the gas weighs from 60 to 100 pounds. The cylinders are set outside of the building and connected with a pipe system for delivery to the appliance. The pressure is reduced at the cylinder so as to deliver the gas under a pressure of 4 to 6 ounces at the burner ports.

There are no especially dangerous features involved in the use of this form of liquefied gas; in fact, the method of manufacture is such that the product is free from poisonous and corrosive substances. There can be no dangerous substances such as carbon monoxide and hydrogen sulphide present. All gases used for fuel purposes will form explosive mixtures with air when confined under favorable conditions. When so mixed with adequate quantities of air it may be exploded upon the introduction of a spark or flame. The quantity of air that must be mixed with propane and related hydrocarbons to produce an explosive mixture is very large; also, the percentage of the hydrocarbon is small and within a narrow range. The quantity of air required may vary between 94 and 98 per cent, or 2 to 6 per cent of the hydrocarbon. In other words, the explosive conditions for the gas from liquefied hydrocarbons are practically identical with those required for artificial and natural gas.

The process for extracting hydrocarbons of this type from natural gas and reducing them to liquid form is not patented.

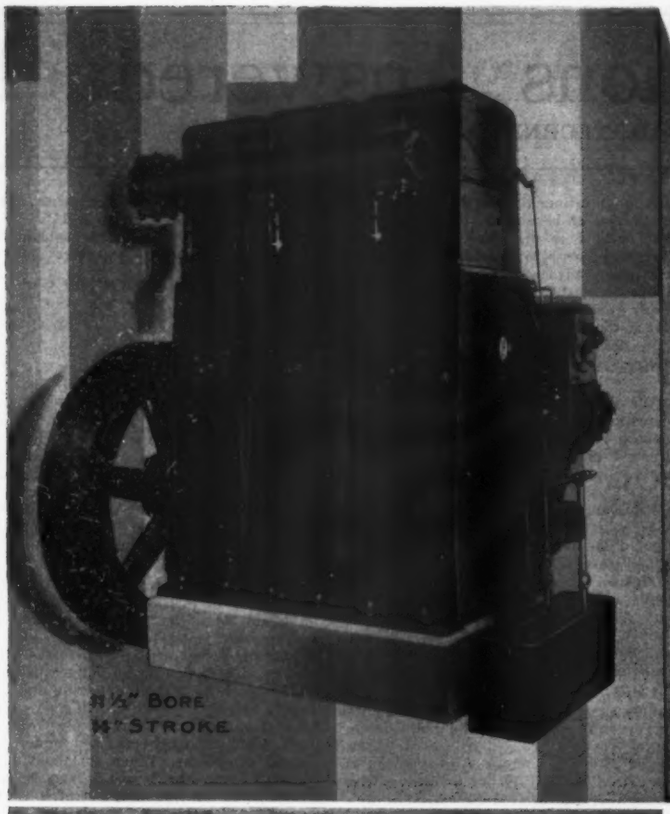
CHEAP SUBSTITUTES FOR GASOLINE

Do you know of any recent progress in processes for making a cheap substitute fuel to replace gasoline? Did anything come out of the methods mentioned several years ago as promising special alcohols, liquids from coal, etc.?—A. M. L.

There is more power in a barrel of crude oil that may be cheaply extracted and purified for motor fuel purposes than any known material. Some day some sort of synthetic fuel may be cheaply manufactured but it appears that little can be expected from substances of the alcohol class. The methods for making alcohols are so expensive that the product cannot begin to compare in price with gasoline. The same is true of the liquids produced from coal and shale.

Price comparisons were made by R. B. Kahle of the Colonial Beacon Oil Co. recently at the Atlantic City meeting of the National Petroleum Association, in which it was said that gasoline is being sold in New York for 3.6 cents a quart, exclusive of tax, while milk costs from 15 to 20 cents, bottled water 5 cents, ginger ale 20 cents, mineral water 25 cents a quart. The world will never have a motor fuel cheaper than gasoline is at present, Dr. H. C. Dickinson of the United States Bureau of Standards has predicted, according to press comment.

"There isn't a chance of discovering new fuel in large quantities materially cheaper than gasoline," Doctor Dickinson was reported to have said. He added that attempts to find a cheap material which, mixed with water, could be used as automotive fuel, are virtually useless



VE

75 TO 565 B.H.P.

2 TO 6 CYLINDERS

HERE'S oil and gas field auxiliary power as Cooper-Bessemer builds it! A wide choice of Vertical engines, thoroughly engineered, to fit your needs exactly. For example — large stations on the lookout for a stand-by or peak-load unit . . small stations looking for a main unit . . both find the answer in the 11-½ x 14 Convertible. You'll save on space and expenses and you'll get smooth, steady power with the Vertical.

CYLINDER COMBINATIONS — SPEEDS — HORSEPOWERS

Cylinder Size 11½" dia. x 14" stroke.

R. P. M.	300	327	360	400
B. H. P. 2 Cylinder Engine	75	80	85	100
B. H. P. 3 Cylinder Engine	110	120	135	150
B. H. P. 4 Cylinder Engine	150	160	175	200

(Also Built in 5 and 6 Cylinder Sizes)

NOTE: This engine is convertible from a gas to a Diesel engine — or vice versa — maintaining the same horse-power ratings. The cylinders are cast enbloc with removable liners.

THE COOPER - BESSEMER CORPORATION

COOPER-BESSEMER

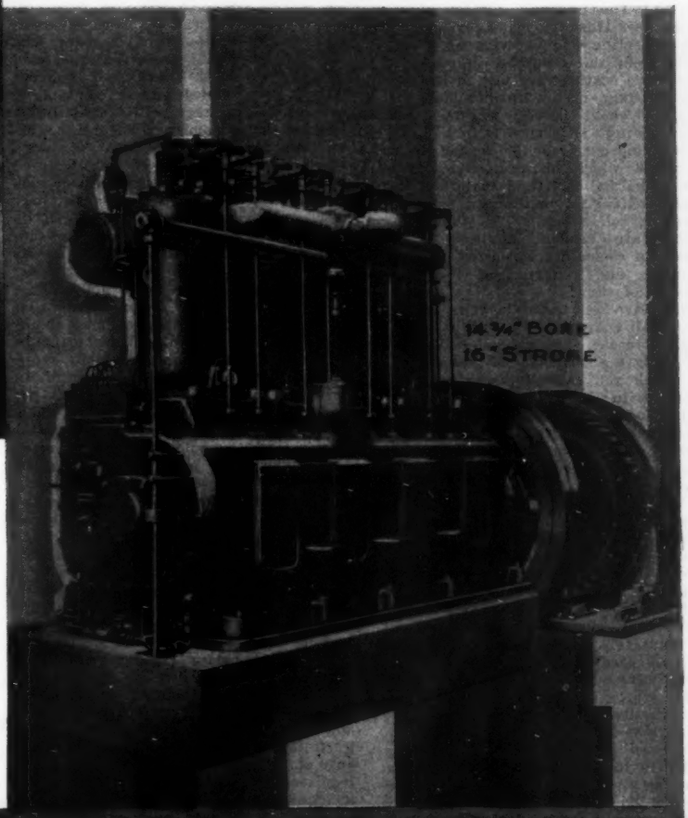
VERTICAL

DIRECT OR BELT DRIVE

Cylinder Size 14¾" dia. x 16" stroke.				
R. P. M.	240	257	277	300
B. H. P. 3 Cylinder Engine	165	175	190	210
B. H. P. 4 Cylinder Engine	215	230	250	280
B. H. P. 6 Cylinder Engine	325	350	375	415

Cylinder Size 18" dia. x 20" stroke.
Brake Horse Power at 225 R. P. M.

3 Cylinder	4 Cylinder	5 Cylinder	6 Cylinder
280	375	470	565



MOUNT VERNON, OHIO—GROVE CITY, PENNA.

Natural Gas Industry Developments

WHAT CAN COMPANY PAY FOR LIFE OF PIPE?

By G. J. Oldershaw
Purchasing Agent, Union Natural Gas Co. of Canada, Ltd.*

In answer to the question, "Do the present protective materials lengthen the life of steel pipe sufficiently to warrant the cost of application?" the main point at issue is cost, as against additional life of line, or in other words, "What can a company afford to pay to increase the life of a pipe line?"

Working on a basis of a 22-mile stretch of 10-inch, 32-pound transmission line which our company recently laid: The cost of this job, uncoated, was $8,318.18 per mile; the cost of coating was $590.90 per mile. Say the normal life of a new steel pipe line uncoated is 20 years. The depreciation would be one-twentieth per year, $415.99 per mile. If, by using a protective coating which would increase the life of this line, would be not feel justified in considering our yearly allowance for depreciation a fair amount to use for this purpose. Let us see how this works out.

1-year depreciation, $415.99 per mile,
2-year depreciation, 831.98 per mile,
3-year depreciation, 1,247.97 per mile,
4-year depreciation, 1,663.96 per mile,
5-year depreciation, 2,079.95 per mile,
10-year depreciation, 4,159.90 per mile,
15-year depreciation, 6,285.39 per mile,
20-year depreciation, 8,318.18 per mile.

These figures show us that the protective coating, as used on this line, would pay for itself if it gave about one and one-half years extra life.

Now some of you will ask, "How do we know that a protective coating will give protection for one, two or five years?" This is a very difficult question to answer. However, many companies are experimenting and carrying on research work along this line, and although these protective coatings are just in the development stage, we are learning more every day, and about the only way until something definite is learned is to:

1. Find out from the vendor the material of which his protective coatings are made, and test these materials as to their individual qualities as to withstanding soil action.
2. Have vendor supply you with names of companies who have used their coatings, and inquire from them their opinion of same.
3. Have soil tested in your territory for alkali content.
4. Test the coating for electrolysis.
5. Have a small plot of ground handy in which you can bury pieces of pipe, coated with the different kinds of protective materials on the market, and at least once a year dig these up for examination. In this connection I would recommend that each sample be marked (preferably with a lead or zinc tag, tied on with a copper wire), showing the date, vendor's name and name of material.

Our examination of the line referred to, after being under ground for one year, shows that the surface of the coating seems to be in as good condition as when laid.

We have, of course, been experimenting for several years with various makes of pipe coating and wrappers, and have found some unsuitable for our purpose, while others so far seem to give very good results.

In view of the experience of our company, and the information I have presented to you, coupled with the fact that manufacturers of protective coatings are continually experimenting to produce a more durable material, I am of the opinion that we should encourage this work.

*Before Natural Gas and Petroleum Association of Canada convention, Niagara Falls, Ontario.

NEED TO SAFEGUARD INVESTMENT IN NATURAL GAS PIPE LINES

By Maj. Alexander Forward
Managing Director, American Gas Association*

There is an impression that natural gas is a free gift of nature, and that it can be obtained and distributed with little cost. This is not a fact. Production, transmission and distribution entail tremendous costs in acquiring and developing natural gas and oil-producing fields. Large sums must be continually invested in the purchase and maintenance of adequate reserves for the future protection of customers. The expenses of drilling and exploration entail great risks, and the investment therein is frequently a total loss when dry holes result, and it is necessary to charge such exploration losses against producing wells. Hundreds of millions of dollars are invested in modern transportation systems to make the product available, and one pipe line now under construction alone, it is said, will cost $125,000,000 to $130,000,000. These investments must earn a return adequate to fully compensate the investors in the industry.

Of course there is always the additional expense of local distribution to domestic and industrial customers, which is the same as that encountered in the service of manufactured gas. There are the same costs of bookkeeping and meter reading, of servicing the appliances, of adapting the product to the customer's needs and of adequately acquainting him with the uses to which this valuable fuel may be put effectively in the home and in industry.

Determining Factor

While natural gas can be taken from the ground at much less cost than coal gas or water gas can be made, the enormous transportation costs when over long distances greatly increase the expense of delivery to local distribution systems. This factor, coupled with development of new producing areas, will eventually determine the economics of natural gas extensions, for obviously a point is always reached where gas can be manufactured more cheaply than it can be transported.

Now, when a company changes over from manufactured to natural gas, if its rates per 1,000 feet to customers are substantially lowered, that means that its gross receipts are correspondingly decreased and all distribution and utilization expenses, or the major costs, go on just the same. The company must maintain a standby manufacturing plant in condition to guard against any interruption to supply and thus to safeguard its customers' interests. Again, natural gas is of constantly higher heating value than the average manufactured gas, the customer uses fewer cubic feet to do identically the same work, and this again reduces the revenue of the operating company without decreasing its operating expenses. The advent of natural gas stimulates the demand for gas house heating, which has a poor load factor, requiring the company to provide and maintain throughout the year large investments upon which earnings can be had for in most instances only a few months, and in some cases only a few days.

Gas Company Handicapped

In some instances, the result has been that the local gas company is so handicapped by lack of revenue as to be unable to adequately continue the best service to its customers. Manifestly it is the duty of the gas company to fully inform regulatory bodies of this situation, and it stands to reason that when this is done, the regulatory authority will see to it that the utility is permitted to charge such rates as will earn revenue to maintain and insure complete and satisfactory service to the public and to attract new capital for necessary extensions. It is obvious that there should be adequate rates to domestic customers, by far the most expensive class to serve, to insure the integrity of the investment, and, until such time as new business can be attached through the addition of new markets or larger consumption by existing markets, the lowering of gas rates is not in the public interest.

The transmission of natural gas by pipe line over long distances constitutes in many instances an interstate movement. This movement has assumed magnitude with a constantly increasing development of the natural gas business. A regulatory commission may feel that it is lacking in adequate power because it cannot regulate in many such instances the price which the local distributing company must pay for the gas which has been transported to it from another state.

It seems certain, however, that the commission may from accurate and authentic sources secure information which will enable it to determine whether the wholesale price of gas at the gate of the distributing city is overreaching and clearly out of line with reason. The contract price paid at the gate by the local distributing company cannot be arbitrarily ignored by the commission in fixing the rates for local distribution, since for instance it may be the lowest gate rate the distributing company can secure from a reliable pipe line company possessing adequate supply and reserves, and the cost of such gas is an operating expense like other operating expenses, such as the cost of coal. If, however, it can be demonstrated that the amount paid for the natural gas transmitted in interstate commerce at the gate of the distributing city is unwarranted, manifestly unreasonable, or overreaching, it appears to me, from such study of the cases as I have been able to make, that the commission is not without power and authority in fixing the local rates to amply and fully protect the consumers of natural gas.

Federal Regulation

As I view the situation, any burden which may be cast on the state commissions in respect to the charge of the wholesale transporting company for its delivered gas to the distributing company is a minor matter so far as the public interest of the consumers is concerned compared with the public disadvantages which must in my opinion result from the establishment by the federal Government of price control of this commodity on the ground that it is moving in interstate commerce. The business of producing gas is a different business from that of the railroad or telephone utilities. I think we may frankly admit that there is an element of chance in connection with the transportation of natural gas over long lines which must be taken into consideration in judging of that industry, and failure to recognize the elements of difference in this respect might well destroy the incentive to the producer of natural gas to continue exploration, development and investment upon which the future usefulness of the natural gas industry in a great field must necessarily depend.

*Before National Association of Railroad and Utilities Commissioners, Charleston, S. C.

GAS FOR GENOA, NEB.

A franchise has been granted by the city of Genoa, Neb., for the service of natural gas by the Iowa Nebraska Light & Power Co. The Supply will come from the Northern Natural Gas Co., Panhandle to Des Moines carrier.

GOOD GAS PRODUCER NEAR PORTVILLE, N. Y.

OIL CITY, Pa., Nov. 29.—A gasser estimated at 500,000 feet daily has been drilled in by James A. Boyle of Bradford, Pa., 3 miles west of Portville, N. Y., in Cattaraugus County and is the first big gas producer to be found in that territory in a number of years. The well is located but a short distance from the McKean County line and wells.

Boyle and his associates are reported to have leased 2,000 acres of land in the vicinity and are planning to complete more wells. Several gas companies are said to be negotiating for purchase of the product. The Producers Gas Co. has the nearest line to the new field.

CANADIAN GAS NEWS

CHATHAM, Ontario, Nov. 29.—Ratepayers of the town of Preston, Ontario, have approved the granting of a franchise to the Dominion Natural Gas Co. Construction of a distributing system will be commenced at once.

An Edmonton syndicate has applied for a franchise to distribute gas in the town of Irma, Alberta. Production for this purpose is available from the Wainwright, Kinsella and Fabyan Fields.

United Gas & Fuel Co., of Hamilton, in which the Union Natural Gas Co. of Canada recently secured a controlling interest, has acquired considerable acreage and production in the counties of Haldimand, Norfolk and Westworth. The area includes a number of producing wells, and a pipe line will be laid to Hamilton, where the natural gas will be used to supplement the artificial product. It is understood some new drilling will be undertaken later.

BUYS LIVE OAKS COMPANY

HOUSTON, Tex., Dec. 1.—Acquisition by the Southwest Distributing Co., a United Gas System unit, of the Live Oaks Gas Co., which distributes natural gas at Pleasanton and North Pleasanton, Tex., has been announced by W. F. Ivers, division manager at New Braunfels. Sam Ricks, manager of the acquired company, will remain as local representative of the United Gas system management. The Live Oaks Gas Co. formerly purchased from the Southern Gas Co.

GAS SALES DECLINED

A group of the larger natural gas companies representing more than 80 per cent of the public utility distribution of natural gas report total sales for September of 31,775,231,000 feet, compared with 34,267,045,000 feet reported for September, 1929, a decrease of 7.3 per cent. The most marked decline occurred in sales of natural gas for industrial uses, which were down nearly 14 per cent from the year previous.

MEMPHIS GAS SALES INCREASE

A 53 per cent increase in sales of natural gas for the first 10 months of this year, compared to the same period of last year, is shown by the comparative sales report issued by Memphis Natural Gas Co. Sales to October 31 this year were 7,097,431,800 feet, against 4,628,966,873 feet last year, an increase of 2,468,464,927 feet.

McCUNE, KANS., TO GET GAS

The Veeder Supply & Development Co. of Cherryvale, Kans., has started construction work on a town plant installation at McCune, Kans., that company having been granted a franchise recently. The gas supply will come from several wells northwest of McCune.

ONE PIECE BODY CASTINGS

AVOID EXTERNAL LEAKS AND SEEPAGE

EMCO large capacity positive meters have 15 years' successful performance behind them. Eminent gas engineers have voluntarily shown us results of independent tests in which the EMCOS, with 10,000 cu. ft. per hour capacity, have accurately measured down to 10 cu. ft. per hour.

Design of EMCO body castings assures freedom from leaks and is inherently stronger than any body requiring side plates held in place by bolts. Our design requires only one-third as many bolts or cap screws, which reduces labor, and eliminates gasket trouble. It avoids seepage troubles when used with manufactured gas.

The body design is exclusive with us. And so is the valve plate, which makes it possible to put an EMCO in a pit or against a wall, and still have all internal parts accessible. Repairs or inspection can be made without removing the meter body from the line, which is impossible with competing meters. There are more EMCO Large Capacity positive meters in use than all other makes combined. They are built in the largest gas meter factory in the world.

10 reasons why EMCOS are better

1. Past Performance.
2. Engineering Design.
3. Free from leaks.
4. 66% less bolts and cap screws.
5. Reduces labor.
6. Eliminates gasket troubles.
7. Avoids seepage.
8. Accessible.
9. Repair or inspection made with meter in line.
10. There are more EMCO Large Capacity Positive Meters in use than all other makes combined.

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Personal Paragraphs About Oil Men

H. Paul Grimm, one of California's two umpires, has returned to Los Angeles from a visit to Chicago.

* * *

Jerry Monaghan, formerly of the Independent Oil & Gas Company, is now with the Mid-Continent Petroleum Corporation.

* * *

H. B. Gutelius, president of the Continental Supply Company, St. Louis, Mo., has completed a trip to the Fort Worth and Houston, Tex., offices.

* * *

Robert McDowell, vice president and director of sales with the Mid-Continent Petroleum Corporation, has returned from a six weeks' tour of England and France.

* * *

J. A. Murphy, of the legal department of the Indian Territory Illuminating Oil Company, at Oklahoma City, Okla., is spending his vacation visiting friends in Wichita, Kans., and Tulsa.

* * *

T. W. Sutherland, general production superintendent of the Lone Star Gas Company, Dallas, Tex., has been laid up in the hospital recovering rapidly from an operation for appendicitis.

* * *

W. S. Vane, superintendent of the land department of the Standard Oil Company of California, San Francisco, has been attending to company business in the California Company's offices at Dallas, Tex.

* * *

F. Paul Getty, head of the Getty companies operating in California and the Mid-Continent, made an inspection trip to the company's Fort Worth, Tex., offices, continuing to Tulsa to visit the Oklahoma offices.

* * *

Walter E. Hart, vice president and treasurer of the Richfield Oil Company and formerly vice president of the Bank of America, has submitted his resignation to Richfield Oil Company officials effective December 1.

* * *

J. Elmer Thomas, petroleum geologist and analyst of Fort Worth, Tex., chairman of the Economic Committee of the Federal Oil Conservation Board, is recovering from an accident that caused him to suffer a severe leg injury while sightseeing at Munich, Germany.

* * *

Dr. Frederick G. Clapp, consulting geologist, spoke before the San Antonio Petroleum Club, at San Antonio, Tex., Monday, December 1, on the oil fields of Persia. Sidney Powers, chief geologist with the Amerada Petroleum Corporation at Tulsa, was present at the meeting.

* * *

John Rogers, land man for the Louisiana Gas & Fuel Company in the Richland and Monroe, Louisiana, gas districts for the past year and more and later in the Jackson district of Mississippi also, has been promoted and transferred to Houston, Tex., headquarters of the United Gas Company, in charge of all the United company land department affairs.

* * *

C. C. Warner has been appointed advertising manager of the Phillips Petroleum Company with headquarters at Bartlesville, Okla. He was formerly associated with the Continental Oil Company during the past seven years. Mr. Warner first became connected with the petroleum industry in 1922 as assistant advertising manager of the Mutual Oil Company at Kansas City, Mo.

* * *

Charles H. Markham, chairman of the board of directors of the Illinois Central Railroad Company, who died recently in Los Angeles, Calif., was with the Gulf Production Company in the early days of that organization, when its headquarters were in Beaumont, Tex. Mr. Markham was an official of the young company and is credited with having had much to do with its success up to the time he withdrew from it to go back to the railroad business, in which he worked at his first job and which later he made his life's work.

Norman Albright, of the Prairie Oil & Gas Company, Independence, Kans., is the father of a 7-pound girl.

* * *

George S. Harrison, director of the Home Oil Company, Ltd., has returned to Vancouver, British Columbia, after a 10 months' world tour.

* * *

C. E. Parker, for three years with the Gulf Production Company in the Wichita Falls, Texas, district., but now in Pampa, has been visiting Wichita Falls friends.

Men of the Industry

M. J. Kirwan

M. J. Kirwan, production manager for the Indian Territory Illuminating Oil Company, began work in the oil business as a roustabout. While attending high school and college in Wisconsin he spent his summer vacations working in the maintenance and construction department of the Chicago and Northwestern Railroad. In 1908 he went to California, intending to engage in railroad engineering, but changed his mind and got a job as roustabout with the Associated Oil Company. Soon afterwards he was put in charge of the designing and construction of lease buildings. Besides this he made drawings and designs of various oil field tools and studied drilling and production methods.

Mr. Kirwan also made a study of the water problems which beset the Coalinga Field in California and when operators of that district formed the Coalinga Water and Arbitration Association in 1913, he served as its engineer. His work caught the attention of the California State Mining Bureau, and in 1915 he became first deputy oil and gas supervisor for the bureau.

After four years of service with the mining bureau, he went to Japan as petroleum engineer for the Nippon Oil Company and instituted new drilling and production methods. He returned to the United States in 1921, and joined the staff of the United States Bureau of Mines in Bartlesville, Okla., as a petroleum engineer and eventually became superintendent of that station.

In 1924 Mr. Kirwan left the Bureau of Mines and became associated with the Indian Territory Illuminating Oil Company as chief engineer. Early in 1930 Mr. Kirwan became manager of production for the company and with his offices in Oklahoma City, Okla., directed his company's extensive development program in that field.

Mr. Kirwan is a member of the Tulsa Club, the American Association of Petroleum Geologists, and the Hillcrest Country Club, Bartlesville.

M. J. Foley, of the land department, Ohio Oil Company, has returned to his Casper, Wyo., offices from a business trip to Montana.

* * *

G. C. Phillips and Bob Brennan, scouts for the California Company in West Texas, spent a few days in the company's main offices at Dallas, Tex.

* * *

H. W. Ladd, of the producing department of the Midwest Refining Company, has returned to Casper, Wyo., from Denver, Colo., where he and his family are about to move.

* * *

J. C. Alexson, president of the Axelson Manufacturing Company of Los Angeles, Calif., with L. F. Merrill, chief engineer, have been touring the Mid-Continent and Eastern oil fields.

* * *

Walter W. Heathman, a member of the Union Oil Company's geological department, announces the arrival of a baby daughter born at the Cedars of Lebanon Hospital, Los Angeles, Calif.

* * *

F. V. Martinek, assistant to Vice President E. J. Bullock, of the Standard Oil Company of Indiana, has recovered from a major operation and has returned to his desk after several weeks in the hospital.

* * *

George H. Jaques, vice president and general manager of the Midwest Refining Company, made a trip to the company's properties in New Mexico, returning by way of the Denver, Colo., headquarters.

* * *

C. P. Ritter, president and manager of the Olympic Refining Company of Long Beach, Calif., visited in Wyoming recently and made a trip of inspection of his properties in various parts of the State on which he plans tests next spring.

* * *

Burr McWhirt, valuation engineer in the geological department of the Shell Petroleum Corporation, was transferred from the northern division office at Tulsa to the Gulf Coast division at Houston, Tex., effective November 15.

* * *

Lewis Emery, Bradford, Pa., oil operator, has presented the Church of the Ascension in Bradford, of which he is a vestryman, with 16 beautiful stained glass windows including a large rose window. The windows will be installed before Easter Sunday in 1931.

* * *

E. L. Harris and C. W. Day of Tulsa, have organized the Ute Oil Company and plan to drill several wildcats in the southwestern part of Oklahoma. The first venture is the Bucy & Stone wildcat in Roger Mills County, which has been shut down for several months.

* * *

Students in the department of petroleum engineering at the University of Texas have organized the Petroleum Club with A. S. Parks of Wichita Falls, president; R. B. Newcome of Austin, vice president; Joe Barber of Bay City, secretary-treasurer; Julius A. Slavik of Runge, scribe; and F. C. Roper of Orchard, sergeant-at-arms.

* * *

Charles F. Meyer, president of the Standard Oil Company of New York, accompanied by F. S. Fales, vice president in charge of marine transportation, and Arthur T. Corwin and Frederick Ewing, directors of the company, have been making an inspection tour of California properties held by the General Petroleum Corporation, a subsidiary of the Standard of New York.

* * *

E. J. Stephany, secretary of the natural gas department of the American Gas Association, Dallas, Tex., has just returned from a trip to New York where he attended the annual dinner and meeting, given by Cliff E. Paige, newly elected president of the American Gas Association for the chairman, vice chairman and secretaries of the natural gas department of the association.

"Hughes"

....a foreword to economy!

Rock bits
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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

RATING OF OIL FIELD BOILERS

Does the rating of an oil field boiler as it comes from the manufacturer indicate its actual, or at least approximately its actual, horsepower, or can it safely be subjected to a heavier load than it is rated for? On what basis are these ratings of oil field boilers made?—G. E. S.

It is customary to rate oil field boilers at a lower horsepower than they really are capable of developing. This seems to be good practice, for the drilling boiler often is called upon to carry severe overloads, as, for example, when pulling frozen casing or mudded tools, when raising pump pressures during mudding operations or when spudding long strings of drill pipe in gumbo. Under such conditions a boiler rated at 45 horsepower may actually deliver steam at several times its rated power.

It is usual to rate a stationary boiler on the basis of 10 quare feet of heating surface per horsepower. In other words, 10 square feet of heating surface under ordinary working conditions is regarded as capable of evaporating 34.5 pounds of water per hour from and at 212° F. This manner of fixing a rating is arbitrary. Boiler ratings should be in square feet of heating surface. The capacity depends upon the quantity of fuel consumed. For instance, an oil field boiler of 75 horsepower, according to the method of reckoning referred to, should have 750 square feet of heating surface, that is, all the surface subject to the heat of the firebox, including the interior of the firebox itself, the flues, flue sheets, etc.

It probably is needless to point out that boilers operating under oil country conditions should receive careful attention and should be watched closely for any sign of weakness in sheets and flues. They should be inspected and cleaned often. The fact is, many oil field boilers receive scant attention, with resultant increase in the likelihood of accident or costly delay.

TUBING DIAMETER IMPORTANT

To just what degree is the production of a well on gas lift influenced by the design of the tubing and the inflow of gas? Will you tell me also please to what extent it is possible to control the gas-oil ratio in a well operated by gas lift?—T. T. O.

With reference to your first question it may be said that the production of a well on gas lift is affected definitely by the gas input, without regard to the character of the tubing. The diameter of the tubing is an important item in gaining the highest possible production. If there is a certain quantity of fluid to be raised and this quantity does not vary, there obviously is a certain size of tubing that will give the best performance. Changing the size of the tubing has had a decided influence on gas lift production. Other conditions being unchanged, an increase in the diameter of the flow tubing allows a larger quantity of fluid to be lifted. The size of the tubing and the volume of gas needed must depend on the quantity of liquid to be raised.

In all lifting operations S. F. Shaw, consulting engineer of the Carter Oil Co., says there are four different points of production that can be obtained in a tubing of given design, whether that design be efficient or not, as follows:

1. Point of no flow caused by deficiency of gas. This is the point where the amount of gas passing through the tubing is just insufficient to lift liquid, but where, if any more gas be added, a flow will start. In a tapered tubing, 1,000 feet long, 7-inch diameter at the bottom and 10-inch at the top, it was found that 1,000 feet of air per minute would not lift any liquid, but when the air was increased beyond this quantity the flow of water would start in small quantity.

2. Point of maximum efficiency. This point for any given tubing design is the point which gives the maximum lifting efficiency for any given set of conditions.

3. Point of maximum capacity. For any given set of conditions, there is a definite maximum capacity which it is impossible to exceed.

4. Point of no flow caused by excess of gas. In any given tubing design it is possible to admit so much gas that there will be no flow of liquid. In other words, the friction loss of this excessive quantity of gas passing through the tubing is equal to the submergence pressure.

In a flowing well, the gas lift factor, or cubic feet of gas required to lift a barrel of oil, is identical with the gas-oil ratio. In artificial gas lift operations, the gas-oil ratio is the difference between the gas lift factor and the gas input factor. The gas-oil ratio may be altered considerably by the quantity of input gas admitted to the well, or, in other words, by the manner in which the well is operated. The gas-oil ratio in artificial gas lift operations may be controlled within certain limits by any one or more of the following operations:

1. Changing the submergence.
2. Changing the lift.
3. Changing the diameter or design of the flow tubing.
4. Changing the quantity being lifted.
5. Changing the temperature.
6. Changing the pressure at the discharge.

In gas lift operations it is possible to make changes in any or possibly all of these factors. The most important change lying within the control of the engineer is that of tubing design. In wells flowing naturally, with a given tubing design, change can be made in submergence, in the lift, and in the quantity of liquid being lifted, by use of beans or flow nipples. Changes of tubing design can sometimes be made in wells flowing naturally, though in many cases this change is attended with considerable difficulty, and unless the engineer is practically certain that he knows just what change of tubing will be beneficial, he is reluctant to make any change at all.

EFFICIENT PUMPING SPEED

Efficient pumping speed is referred to frequently in articles on oil production. Can you tell me just what an efficient pumping speed is? That is, what factors are involved?—D. G. T.

There are a good many different opinions as to what is the most efficient pump speed for wells and it is a fact that they will vary over a wide range dependent upon the type and depth of well under consideration.

There has been a tendency in California to lower pump speeds materially in deep wells in line with the theory that this slower movement of rods and traveling valve in the well permits the stretch in the rods to equalize and the valve to travel full length in the barrel before it is reversed in its direction of travel.

In an article in The Oil and Gas Journal of July 24, 1930, Bruce H. Robinson and Robert R. Robinson summarize their views on this problem as follows:

"By the most efficient speed is meant that which is best adapted to all other factors: A good rod motion, free from excessive vibration; low rod stresses; a plunger stroke sufficient to keep up production and one which will give good power economy and not overload the pumping mechanism or prime mover in either average or peak loads. This can only be determined by inspection of the dynamometer card and meter readings."

This statement is true of all wells and to it might be added that the rate of production required of the well is another factor that is determined by local conditions and the attitude of the production superintendent upon the necessity for quick recovery of the oil.

If it is felt that rapid pumping is necessary to move as large an amount of fluid as possible and thereby get as much oil as possible, it may be that factors of efficiency and overloading of pumping mechanism may be overlooked. But in the main the statements quoted above should be applicable to all pumping wells and if careful study is made of the individual well using dynamometers and other instruments to give data of the well conditions they can be so applied and interpreted as to give good results.

Pumping wells need much study and there is need for an exchange of data between companies and a further study of these problems in every field.

WHY WAS IT CALLED THAT?

MASTER GATE

The word "master" long has been used to denote a person or thing that leads or controls. Thus we have such terms as "master key," "master workman," etc. By analogy "master gate" became the name applied to a valve or gate placed in a position where it controls the flow of oil or gas, distinguishing it from smaller or secondary valves or gates that may be used in the same system.

GEOLOGY IN CUSHING FIELD

An argument has arisen concerning the Cushing Field in Oklahoma as to whether that field was discovered by geologists or not. Can you tell me, to settle the argument? Also can you tell me, please, how the Wilcox sand got its name?—S. T. N.

The Cushing Field was discovered without the aid of geology in 1912 on a large surface and subsurface anticline embracing subsidiary domes and saddles. Active development of the field followed throughout the succeeding year and by August, 1913, the producing area was 9 miles long and 3 miles wide. Geologists were able to predict the productive limits of the pool. As surface work was carried on from Cushing as a center many small domes and anticlines, since productive, were found in Osage County, a few were found west of Cushing, one south of Cushing and a few east of Cushing. During 1914 the development of deeper sands at Cushing and the proof by drilling that geological maps of surface outcrops delimited oil accumulation, gave further impetus to geological exploration. In the same year the Oklahoma Geological Survey published a structure contour map of the surface geology of the Cushing Field prepared by Frank Buttram. This was the first published structure contour map of the field. The subsurface contours and the line separating oil from salt water paralleled the surface contours so closely that operators, some of them previously skeptical about the value of geological work, were impressed, and many of them employed geologists forthwith.

The Wilcox sand got its name from H. F. Wilcox, who completed a well in that horizon in April, 1914, in the Bixby Field, Oklahoma. Mr. Wilcox later organized the H. F. Wilcox Oil & Gas Co., of which he is president.

GAS RESERVE FORMULAS

We are anxious to obtain information dealing with approved formulas and methods for estimating gas production from sands of known thickness, porosity and rock pressure. Please refer us to the most recent reliable papers, bulletins and books dealing with this subject.—H. B. C.

There is a diversity of opinion among engineers concerning this subject of estimating gas reserves. There are two standard methods, the pressure-volume and the porosity methods, but an accurate estimate of any gas reserve is dependent mainly upon a complete engineering knowledge of the gas field and of the producing conditions in that field. Strict mathematical interpretation of the formulas in the two named methods of estimating reserves will not of course give accurate results.

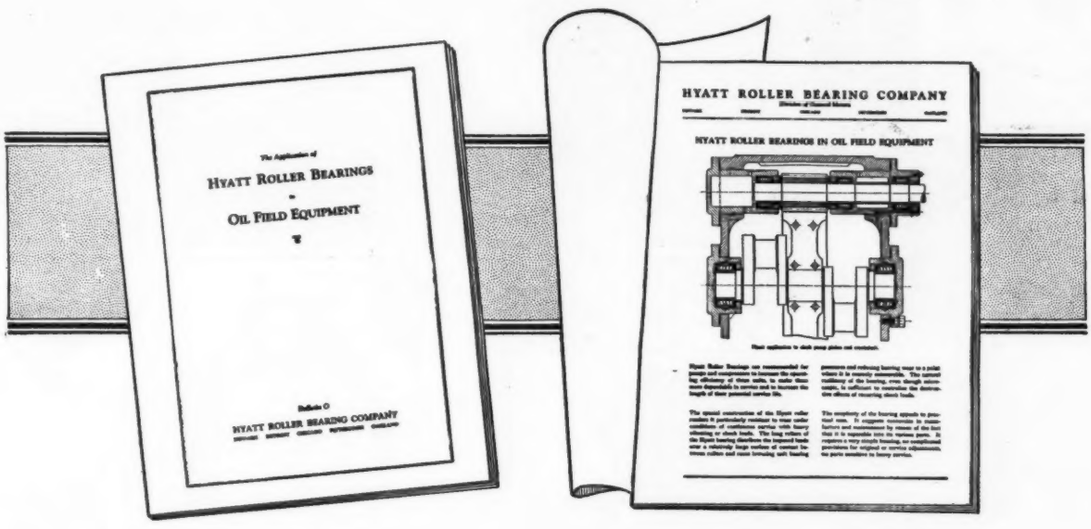
Either of the methods serves only as a basis and the real reserve estimate should be based upon a complete study of the gas field including such phases as water encroachment, variation of sand thicknesses, the availability of gas or the ability of the sand to produce the gas at high back pressures, a study of the sand porosity, whether the producing formations are consolidated or unconsolidated, and other conditions.

From this you will note that to estimate a gas reserve is the work of both a geologist and petroleum engineer and while much has been written about natural gas, to apply it requires considerable actual field experience.

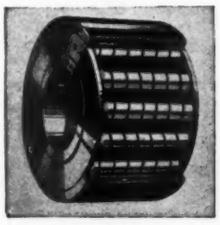
A bibliography that will give you a list of several articles that should be of interest is being sent to you, and other data may be obtained from the United States Bureau of Mines, Washington, D. C.

YOURS for the asking

An engineering bulletin on the application of Hyatt Roller Bearings is now ready for distribution. It contains numerous typical designs which will serve as guides to the correct application of Hyatt Roller Bearings, and a summary of the many advantages which result from their use.



This new publication may be had by any equipment manufacturer, operating executive, or any other person interested. It will familiarize you with the possibilities of Hyatt application. Write for it.



Equipment builders and operating men interested in modern design will find this bulletin useful and timely. Based on the knowledge obtained from years of experience with many successful installations, its contents reflect a thorough understanding of oil field equipment requirements. Its suggestions will appeal to practical men whose concern is the building or purchasing of equipment capable of profitable operation.

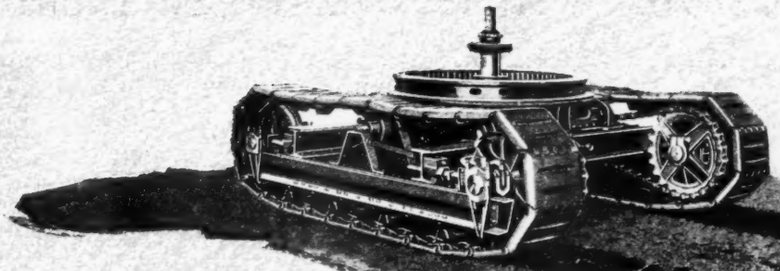
HYATT ROLLER BEARING COMPANY
Newark Detroit Chicago Pittsburgh Oakland

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

Active Oil Men as Seen by The Journal's Camera

1—Joe Howell, production superintendent, Broderick & Calvert, Van, Tex. 2—B. B. Wilson, engineer; and W. A. Beam, chief engineer, Oklahoma Natural Gas compressor station, Red Bird, Okla. 3—Pete Ward, driller; and Marvin Keith, tool dresser, Henryetta Drilling Co., Graham and Amarillo, Tex. 4—Left to right: Sam Homyak, chief clerk; Jerry, Ibach, inspector for the refinery division; Bill Stewart, assistant still foreman; John Norman, master mechanic; Hugh Miller, refinery superintendent; Earl Hamilton, process clerk; Paul Peters, clerk; A. O. Buenz, head of electrical mechanical department; Charley Maples, yard foreman; Eris Stewart, chief gauger; Ralph Wilt, still foreman; and C. A. Akers, chief chemist; Phillips Petroleum Co., refinery, Borger, Tex. 5—Top row: A. L. Moore, construction foreman; W. J. Adams, S. B. Simpson, and C. E. Woodard; bottom row: R. B. Smith and J. W. Woolery, carpenters; Tye Treadway, gang pusher; and J. W. Worth, Humble Oil & Refining Co., Van, Tex. 6—H. L. Deming, assistant general manager, southwestern division, Sinclair Refining Co., Fort Worth, Tex. 7—F. E. Hatfield, district superintendent, Panhandle district, Gulf Production Co., Borger, Tex., and C. S. Youngblood, purchasing agent, same company, Fort Worth, Tex. 8—J. F. Long, who has been wtih the Lone Star Gas Co., Dallas, Tex., for over 15 years. Until last winter he had not missed one day from service. 9—H. B. Poff, manager, Logan Map Co., San Antonio, Tex.

A STEERING FEATURE



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OGJ 12-4 Gray

NORTHWEST

CRANES · SHOVELS **CONVERTIBLE** *and* DRAGLINES

Gasoline, Oil and Electric Powered

Texas Gross Production, Third Quarter, 1930

Gross receipts tax on crude oil production in Texas, quarter ending September 30, 1930:

Name and address—	Barrels	Value
A		
Adams, McGahey & Osborne, Amarillo	11,508.62	$15,025.68
Adams & Prince, Amarillo	15,403.64	19,385.76
Ailes, J. W., Wichita Falls	742.68	769.24
All-American Oil & Gas Co., Oklahoma City, Okla.	1,768.68	2,312.12
Antelope Creek Oil & Gas Co., Amarillo	4,235.24	3,261.14
Andrews Petroleum Corp., New York, N. Y.	4,080.60	3,822.83
Atkinson & Sandefer Oil Corp., Breckenridge	8,610.34	11,279.29
American Refining Properties, Wichita Falls	51,340.14	54,772.22
Abbott, R. W., Beaumont	911.14	1,047.81
Allaun, William E., Atlantic Keystone Petroleum Co., Bolivian Petroleum Co., Fort Worth	1,181.10	1,003.94
Alamosa Oil Co., Amarillo	5,536.23	4,498.64
Ada Belle Oil Co., Batson	22,769.28	26,184.67
Arkansas Fuel Oil Co., Shreveport, La.	123,194.00	175,658.88
All-American Oil & Gas Co., Oklahoma City, Okla.	1,998.52	2,571.54
Apple-Brandeberry Oil Co., Wichita Falls (6-30-30)	10,133.04	13,471.41
Atlas Production Co., Burkburnett (6-30-30)	1,291.47	1,429.47
Art & Taxman, Wichita Falls	1,156.16	1,609.49
Allbritain, F. J., Markley	942.87	1,282.30
Arnold, J. L., et al, Eastland	696.76	769.16
Arab Gasoline Corp., Eastland	847.23	1,105.59
Ashe Syndicate, Fort Worth	782.68	1,064.44
Acorn Oil Co., Beaumont	7,645.04	8,791.79
Allied Oil & Gas Co., Laredo	99,483.97	84,561.35
American Maracaibo Co., New York, N. Y.	87,829.67	73,528.16
Andrews, W. R., et al, Breckenridge	846.82	1,114.48
Allday Oil Corp., Wichita Falls	467.97	453.93
Ama-Gray Oil Co., Amarillo	4,334.51	5,439.76
Alaska Petroleum Co., Amarillo	1,125.75	1,233.77
Arrow Head Oil Co., Dallas	1,458.13	1,961.90
Atlas Production Co., Burkburnett	1,039.55	1,039.55
Abercrombie, J. S., Co., Houston	198,553.02	226,830.16
Abraham, Earl, Bridgetown	1,182.81	1,416.13
American Refining Properties (NBC), Wichita Falls	1,142.17	1,576.54
Artex Oil Co., Wichita Falls	1,081.49	1,455.85
Atlantic Oil Producing Co., Dallas	849,149.47	850,742.65
Adamson, Peter, Jr., Tulsa, Okla.	241.90	377.45
A. & P. Production Co., Houston	57,960.73	64,524.74
Alamo Oil Co., Brownwood	420.00	531.25
Arcadia Refining Co., Coleman	16,949.70	22,480.83
American Refining Properties (WMP), Wichita Falls	6,414.75	7,947.80
Ascot Co., Wichita Falls	934.98	1,113.44
Amarillo Oil Co., Amarillo	1,424.50	1,296.30
Aarco Oil & Gas Co., Baltimore, Md.	8,042.54	11,393.92
American Petroleum Corp., Tulsa, Okla.	291,683.93	273,713.17
Adams & Lyles, Lockhart	6,571.13	7,556.79
Amicable Life Insurance Co., Waco	600.00	600.00
Adams & Lyles, Lockhart	2,147.27	2,845.23
Ames, E. W., et al, San Antonio	183.22	255.58
Atlas Oil Corp., Humble	1,570.00	1,805.00
Arco Oil Co., Wichita Falls	31,428.72	29,446.03
Adams, Dr. Walter B., Wichita Falls	460.44	629.68
Anderson-Kilgore-Simmons, Fort Worth	22,603.35	17,020.71
Anderson Properties-Simmons A Lease, Fort Worth	15,093.93	11,416.87
Anderson Williamson Co., Prop., Fort Worth	245,339.29	177,939.82
Anderson, C. N., Tr., Des Moines, Iowa	1,248.94	1,705.09
Anderson, J. T., Cisco	2,440.00	3,345.00
Alworth-Stevens-Hild Co., New York, N. Y.	1,262.91	1,073.47
B		
Bradstreet, The L. G., Co., Fort Worth	49,538.70	66,984.77
Blue Bonnet Petroleum Corp., San Antonio	671.52	728.29
Brownlee-Pope Oil Co., Austin	1,799.25	2,352.43
Beams, Drew, Okmulgee, Okla.	1,719.11	2,277.80
Briggs, R. E., et al, Corsicana (3-31-30)	38.97	48.91
Burk Burnett, Jr., Oil Co., Fort Worth	451.59	615.97
Briggs, R. E., et al, Corsicana (6-30-30)	54.43	68.30
Butler & McAlister (Townsite Oil Co.), Olney (3-31-30)	187.00	267.93
Butler & McAlister (Townsite Oil Co.), Olney (6-30-30)	314.00	449.03
Braden Co., The, Tulsa, Okla.	3,426.48	4,458.35
Brown, Mrs. Carrie L., et al, Orange	13,019.90	14,972.87
Brown, Dr. E. W., Estate, Orange	584.49	672.15
Borealis Oil Co., Oklahoma City, Okla.	3,551.89	4,854.22
Baker, J. F. & H. E., Breckenridge	2,635.00	3,451.60
Baker, J. A. & Mollie B., Breckenridge	6,045.00	7,869.29
Baker, Mollie B. & Fred R., Breckenridge	702.00	940.68
Bowman Oil Co., Rockdale	468.05	613.15
Birk, C. E., & C. L. Kelley, Iowa Park	125.50	168.87
Birk, C. E., & C. L. Kelley, Iowa Park (Dec. 31, 1929; March 31, 1930; June 30, 1930)	385.17	535.25
Black, W. A., Midland	1,038.32	1,162.91
Baker & Pardue, Breckenridge	10,426.16	13,907.38
Eass & Dillard, Wichita Falls	2,292.77	3,177.55
Bynum & Palmer, Rockdale	160.59	213.12
Bourbon Royalty Co., Dallas	2,074.97	2,404.80
Bourbon Royalty Co., Dallas	1,042.27	1,680.23
Bolin, D. H., & R. W. Lindsay, Graham	526.76	711.12
Butler & Perkins, Olney	159.47	205.71
Bruce, A. D., Brownwood	331.60	404.43
Badger Oil Co., Amarillo	13,322.73	16,924.20
Burton McKee Oil Corp., Strawn	509.08	674.54
Britton & Gordon, Strawn	608.85	864.57
Britton, Ed. S., Tr., Wilbar Lease, Strawn	2,773.20	3,802.36
Burns, L. T., Wichita Falls	81,831.32	114,760.93
Bynum, W. W., Estate, Rockdale	782.94	1,023.23
Beggs, George, Strip, Fort Worth	1,458.21	2,384.19
Brownwood Producing & Refining Co., Brownwood	1,299.60	1,695.89
Baker, James Blair, Jr., & C. F. Camp, Tr., "B" Lease, Wichita Falls	17,728.11	22,881.29
Baker, James Blair, Jr., & C. F. Camp, Tr., Wichita Falls	2,155.10	2,780.08
Barbara Oil Co., Chicago, Ill.	2,652.28	4,011.45
Bartlett Production Co., Rockdale	590.82	773.98
Biel, William A., Von Ormy	40.00	46.00
Bona, Joseph F., Denver, Colo.	6,652.04	7,244.35
Bohner, C. J., Oil Corp., Burkburnett	18,213.76	24,731.16
Bohner, C. J., et al, Burkburnett	6,486.88	8,463.85
Bohner, Crenshaw & Whitehill, Burkburnett	6,902.02	8,996.82
Baldwin, F. C., et al, Fort Worth	1,325.55	1,921.16
Big State Oil Corp., Houston	1,804.27	2,363.89
Bashara, J. F., Houston	18,157.96	22,707.00
Boardman & Ulrich, Corsicana	1,849.00	2,496.00
Bullington-Clark et al, Wichita Falls	5,024.08	4,339.83
Bailey, Mrs. Fannie W., Wichita Falls	1,182.67	1,633.56
Bevering, A. H., et al, Henrietta	1,174.50	1,526.92
Boller, C. W., Wichita Falls	25,107.86	35,063.93
Brown, R. L., Fort Worth	11,811.32	13,583.01
Bonner Co., Wichita Falls	17,850.42	24,493.02
Bailey, Carl B., Wichita Falls	7,317.21	9,843.76
Bluebonnett Oil Co., Wichita Falls	703.41	934.55
Biggs Oil & Gas Co., McKinney	885.37	1,289.09
Buttram, Frank, Oklahoma City, Okla.	646.64	909.93
Brown, A. J., Fort Worth	1,589.77	1,339.35
Bradstreet, L. G., Co., Fort Worth	40,000.92	53,899.79
Buchanan, A. A., San Antonio	36,743.12	45,159.98
Biles, George J. (Marquette Oil Co.), Tulsa, Okla.	4,590.34	5,273.09
Brown Farm Oil Co., Wichita Falls	1,688.77	2,364.82
Burke-Greis Oil Co., Tulsa, Okla.	1,610.91	2,307.48
Bexata Oil Co., San Antonio	1,062.42	1,183.82
Barkley, Gholson et al, Ranger	94.40	116.16
Barkley & Crotty, Ranger (6-30-30)	4,125.55	5,481.15
Barkley & Crotty, Ranger (3-31-30)	4,627.92	5,973.21
Barkley & Crotty, Ranger (12-31-29)	4,429.78	6,664.98
Barkley & Crotty, Ranger	3,654.53	4,858.58
Parkley & Conway, Ranger	4,810.85	7,339.72
Baker, James Blair, Jr., "A" Lease, Wichita Falls	406.56	406.56
Baker, James Blair, Jr., et al, "B" Lease, Wichita Falls	788.87	788.87
Bashara, M. J., & Sons, Wichita Falls	2,179.23	2,151.59
Benedum-Trees Oil Co., Pittsburgh, Pa.	10,518.67	8,774.70
Brazelton Brothers & Williams, Olney	4,981.36	6,939.33
Brooks & Hanlon, Inc., Tulsa, Okla.	564.43	672.41
Burkburnett Production Oil Trust, Baltimore, Md.	1,113.43	1,512.90
Bridwell Oil Co., Wichita Falls	147,109.67	174,567.71
Bridwell & Heydrick, Tr., Wichita Falls	1,320.84	1,888.33
Bridwell & Mayfield, Wichita Falls	7,534.17	5,170.90
British-American Oil Producing Co., Tulsa, Okla.	4,712.27	6,654.65
Breeding & Hutson, Rising Star	357.97	536.36
Big Lake Oil Co., Pittsburgh, Pa.	1,186,086.95	1,590,843.12
Barnsdall Oil Co., Tulsa, Okla.	81,309.16	97,520.71
Buttram Petroleum Corp., Oklahoma City, Okla.	29,244.87	43,640.66
Butler, J. A., Albany	148.00	181.07
Bezold & Young, Sheridan, Wyo.	3,195.76	4,128.15
Bohner, C. F., Kansas City, Kans.	60.00	75.00
Barnes, J. B., Electra	11,151.41	12,312.16
Barnsley, Foster, Laredo	7,924.58	6,728.13
Big Gray Oil & Gas Co., Amarillo	28,927.07	36,753.14
Bell Oil & Gas Co., Tulsa, Okla.	2,124.71	1,701.59
Black Diamond Oil Co., Amarillo	.....	.....
Brazos River Gas Co., Wichita Falls	.....	422.72
Bolin, D. H., trustee, Graham	10,503.29	13,943.91
Byrd, W. E., Hull	1,021.17	1,174.35
Brady Brothers, Minerva	792.85	1,036.80
Brannon & Murray, Cisco	2,498.53	3,485.36
Booth, C. H. and A. T. Priesmeyer, trustee, Taylor	30,193.06	22,662.31
Black Cat Oil Co., Electra	847.08	1,162.03
British-American Oil & Gas Co., Tulsa, Okla.	13,034.65	16,843.69
Brown & Lickey, Wichita Falls	861.34	1,138.63
Brown & Guinn, Wichita Falls	190.27	280.87
Brazos River Gas Co., Wichita Falls	105.04	164.91
Baird Oil Co., Putnam	134.40	177.18
Bowers Oil Co., Vernon	1,150.50	1,524.36
C		
Carey, C. W., Wichita Falls	6,106.95	8,305.45
Continental Oil Co., Ponca City, Okla.	2,180,484.75	2,211,590.46
Cromwell, Carl G., San Angelo (6-30-30)	7,055.35	7,265.74
Cal Tex Oil Co., Somerset (6-30-30)	259.77	264.96
Chapman, J. O. (Chapman estate), Waxahachie (6-30-30)	23,838.66	36,687.97
Castlebury, S. A., Vernon (6-30-30)	318.67	401.70
Cole Petroleum Co., Laredo (6-30-30)	16,931.39	14,391.69
Cole Petroleum Co., Laredo (3-31-30)	18,401.19	13,896.96
Cole Petroleum Co., Laredo (12-31-29)	21,920.24	19,728.23
Cole Petroleum Co., Laredo	27,216.38	24,494.74
Collier, J. W. and Mabel, Tipton, Okla. (3-31-30)	79.43	107.23
Cezeaux & Martin, Humble (3-31-30)	3,359.07	3,906.92
Cezeaux & Martin, Humble (12-31-29)	4,233.00	4,771.33
Cezeaux & Martin, Humble (6-30-30)	5,336.05	6,463.43
Cezeaux & Martin, Humble	9,374.24	10,945.71
Cranfill Brothers Oil Co. et al, Dallas	27,657.37	21,271.40
Coble-Whittenburg Oil Co., Amarillo	200.20	155.12
Curry, E. M., Pioneer	1,333.99	1,960.03
Cunningham Production Co., Houston (10-1-29 to 6-30-30)	10,043.92	11,287.11
Central Texas Refining Co., R. L. Wheelock, receiver, Corsicana	9,976.95	11,920.17
Crabb & McNeel, San Angelo	3,053.87	3,375.02
Cashdollar & Snyder, Brownwood	162.80	185.59
Cushing Refining & Gasoline Co., Cushing, Okla.	12,026.76	9,793.39
Clark-Buffalo Oil Corp., Buffalo, N. Y.	687.08	880.24
Callihan, George, and Carter Development Co., Albany	2,490.36	3,168.66
Coffield & Hale Oil Co., Rockdale	1,589.74	2,028.27
Comet Petroleum Co., Fort Worth	2,565.47	2,097.91
Craig & Lowrie, Pittsburgh, Pa.	1,199.41	1,282.46
Clarkson, William, Jr., Houston	4,764.93	6,477.64
California Co., The, Dallas	1,497,217.00	1,227,526.24
Clear Lake Oil Co., Rockdale	728.45	954.40
Clark, R. R., et al, Wichita Falls	33,336.18	45,043.47
Clayton Key Oil & Gas Co., Amarillo	7,732.71	9,250.00
Christie Brothers, Wichita Falls	43,459.19	60,226.67
Canyon Oil & Gas Co., Inc., Cross Plains	803.54	1,097.78
Cable Oil Co., Wichita Falls	4,321.21	5,857.90
Camp Oil & Gas Co., Wichita Falls	626.34	839.97
Campbell, Alma, Fort Worth	903.55	1,223.90
Cox, Edwin B., Ardmore, Okla.	1,477.79	1,858.51
Clem Oil Co., Houston	440.27	372.22
Cady, C. C., Moran	296.82	317.59
Collins, J. L., & Co., Corsicana	43,474.69	33,581.64
Connell-Wixson-Frazier, Eldorado, Kans.	932.48	1,077.01
Carlin & Tobin, Ranger	387.00	510.30
Capitol Oil Co., Orange	972.16	1,117.98
Cullen, H. R., et al, Houston	8,076.45	8,561.04
Cullen & West Production Co., Houston	4,172.61	5,132.41
Cornhusker Oil Co., Laredo	1,529.88	1,300.40
Coline Oil Corp., Oklahoma City, Okla.	4,151.62	5,787.10
Chalk, Otis, Big Spring	5,157.54	4,053.86
Cuno, Mrs. Bertha, et al, Moran	1,674.18	2,168.92
Chenault, W. L., Amarillo	529.14	755.30
Caruthers Co., San Antonio	1,259.40	1,330.62
Cosden, J. S., Inc., Fort Worth	6,692.22	8,755.16
Corvette Oil Corp., Fort Worth	5,833.70	3,732.44
C. R. & M. Drilling Co., San Antonio	19,907.19	22,893.26
Carey, E. S., et al, Wichita Falls	.....	.....
Coppock & Coleman, Iowa Park	13,491.00	19,517.63
Cardinal Oil Co., San Angelo	55,628.03	27,814.02
Culbertson Co., Wichita Falls	7,977.75	10,897.93
Cisco Oil Co., Tulsa, Okla.	19,227.11	23,278.98
Conway Brothers, Ranger	3,397.07	4,738.93
Conway Brothers & Chapman, Ranger	338.47	396.02
Charter Oil Co., Brownwood	6,062.92	8,044.63
Champlin Refining Co., Enid, Okla.	159,500.60	183,901.01
Clark, R. R., Wichita Falls	11,050.80	15,320.34
Crosbie, J. E., Inc., Tulsa, Okla.	3,167.20	2,454.56
Cullum, F. P., Wichita Falls	11,986.23	16,283.87
Crown Oil & Refining Co., Houston	17,952.48	20,645.36
Cosa Oil Co., San Antonio	225.84	330.84
Cromwell, Carl G., San Angelo	3,091.34	3,183.21
Cromwell, Carl G., San Angelo	8,237.99	6,627.96
Church & Weekley, Fort Worth	57,387.17	47,941.49
Clay, J. D., Houston	3,316.34	3,608.50
Chestnut & Smith Corp., Tulsa, Okla.	12,776.55	17,568.57
Cal Tex Oil Co., Somerset	284.10	289.78
Cole, W. C., Wichita Falls	1,032.40	1,424.71
Campbell, Walter K., Co., Wichita Falls	764.95	1,042.59
Clark, C. W., Wichita Falls	6,955.65	9,540.99
Consolidated Oil Co. of Texas, Wichita Falls	110,688.20	143,412.23
Crown Central Petroleum Corp., Houston	42,265.76	35,925.87

(Continued on Next Page)

The *Ideals* of Leadership

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THE ADA WEEKLY NEWS
The Cincinnati Post
The Detroit Free Press
Seattle Post Intelligencer
FORT SMITH TIMES RECORD
THE SALINA JOURNAL
The McAlester News-Capital
Oakland Tribune
DAILY COMMERCIAL NEWS
ST. LOUIS POST-DISPATCH
BARTLESVILLE ENTERPRISE
San Francisco Chronicle
AKRON BEACON JOURNAL
The Oklahoma News
BLACKWELL EVENING NEWS
Youngstown Vindicator
The San Francisco News
Spokane Daily Chronicle
THE OHIO STATE JOURNAL
The Canton Daily News
The Bryan County Democrat
Evening Express
THE CINCINNATI ENQUIRER
AMARILLO DAILY NEWS
EVENING TRIBUNE
THE INDIANAPOLIS NEWS
NIGHT EXTRA
Pampa Daily News
MONROVIA NEWS-POST
PASADENA STAR-NEWS
THE WALL STREET JOURNAL.
THE LEXINGTON HERALD
THE KANSAS CITY STAR
Press-Telegram
BERKELEY DAILY GAZETTE
THE FRESNO BEE
THE NASHVILLE TENNESSEAN
Shreveport Journal
The Newark Advocate
The San Diego Sun
Independence Daily Reporter
HERALD-POST
THE TACOMA NEWS TRIBUNE
Salt Lake Telegram
The Birmingham News

Chicago Daily Tribune
THE WORLD'S GREATEST NEWSPAPER
The New York Times.
ERIE DISPATCH-HERALD
The Birmingham Post
Wichita Daily Times
SHAWNEE EVENING STAR
CHICAGO HERALD AMERICAN
THE FLINT DAILY JOURNAL
Ranger Times
AURORA DAILY BEACON-NEWS
GALVESTON TRIBUNE.
BUFFALO EVENING NEWS
The Washington Reporter
OKLAHOMA CITY TIMES
BINGHAMTON PRESS
PEORIA EVENING STAR
"The Newspaper People Believe In"
Chickasha Daily Express
Okmulgee Daily Democrat
THE FREDERICK LEADER
ALBANY EVENING NEWS
SANTA FE NEW MEXICAN
PLAIN SPEAKER
Pampa Daily News
Arkansas City Daily Traveler
TRIBUNE
Fayettevil
Record
THE FREI
ULLETIN
RIVERSII
et News
The Hoba
Times
THE NEW
American
The Olea
BANNER
THE COM
CITIZEN
TOLEDO
Banner.
Kansas City
THE CHA
The Winfield Daily Courier
JLLETIN
And THE DAILY FREE PRESS
THE MORNING CHRONICLE
THE HERALD-PRESS
"REACHES THE HOMES IN BERRIEN COUNTY"
LANSING CAPITAL NEWS
The South Bend Tribune.
The San Diego Union
REDLANDS DAILY FACTS
THE CHICAGO DAILY NEWS
Memphis Press-Scimitar
The Havana American
Chicago Journal of Commerce
— AND LA SALLE STREET JOURNAL —

THE OIL and GAS JOURNAL is the only oil publication that gives the detailed facts which are published accurately and without color. Not only does the Oil Industry recognize this fact, but also do the largest news gathering organizations who depend upon information contained in The Oil and Gas Journal, and quote it weekly as the authority on Oil.

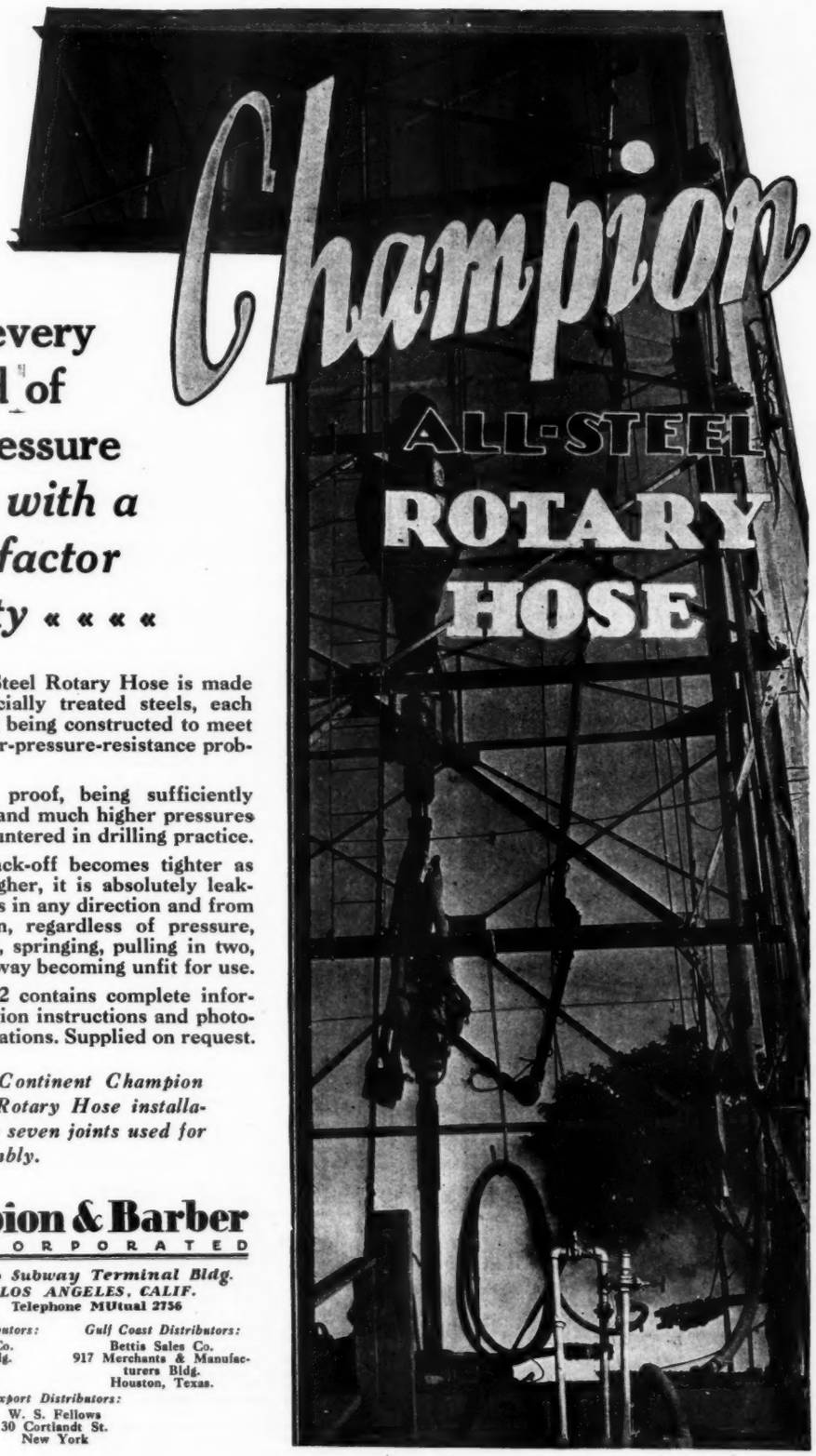
Note: These are but a few of the newspapers that quote this publication regularly.

The OIL and GAS JOURNAL
PRODUCING REFINING ENGINEERING MARKETING
TULSA, OKLA.

TEXAS GROSS PRODUCTION, THIRD QUARTER (Continued)

Name and address—	Barrels	Value
Cohen, Aaron, Baltimore, Md.	6,408.39	9,443.35
Cranfill Brothers Oil Co., Wichita Falls	6,457.40	9,133.22
Corpus Christi Oil Co., Corpus Christi	392.77	333.85
Chapman, P. A., estate, Waxahachie	11,267.62	14,533.78
Central Oil Co., Cameron	3,181.67	4,064.90
Carter, Roy I, Wichita Falls	21,170.67	16,307.41
Cockrell-McIlroy Oil Co., Amarillo	107,129.45	114,126.34
Center Field Oil Co., Amarillo	354.85	275.00
Cole Petroleum Co., Laredo	15,606.60	13,264.61
Conner Son & Cloughley, Gotebo, Okla. (6-30-30)	11,972.41	16,586.09
Conner Son & Cloughley, Gotebo, Okla.	12,233.87	16,133.17
Cunningham, J. C., Graham	2,326.59	2,326.59
Cunningham & Lynch, Graham	10,913.09	15,123.85
Chapman, E. L., et al, Fort Worth	63,643.05	42,393.32
Campbell, R. S., Humble	645.49	684.46
Carey, E. S., et al, Wichita Falls	648.26	827.29
Cranfill-Reynolds Co., Houston	576,337.96	636,669.09
D		
Deaner, J. J., Laredo	79.29	79.29
Deutser, B., trustee, Beaumont	1,185.69	1,363.54
Developers Oil & Gas Co., Wichita Falls	521.00	745.34
Developers Oil & Gas Co., Wichita Falls (6-30-30)	536.00	761.04
Darby Petroleum Corp., Tulsa, Okla.	16,523.39	23,925.52
Dalton Bell Oil Co., Mineral Wells (March and June Qts.)	882.00	1,234.00
Davis Oil Corp., Vernon	40,291.88	52,630.17
Dale, Jack B., Wichita Falls	2,792.92	3,945.85
Dale & Crawford, Electra	696.38	970.61
Dudley, G. S., Iowa Park	1,531.67	2,175.60
Dale-Knotts Oil Co., Wichita Falls	245.53	354.67
Derby-Haines-Williams, Wichita, Kans.	786.45	608.37
Derby Oil Co., Wichita, Kans.	2,494.48	2,747.53
Derby & Haines, Wichita, Kans.	4,105.18	4,181.77
Derby Oil Co., Wichita, Kans.	8,820.55	11,321.41
Douglas Oil Co., Tulsa, Okla.	6,471.81	8,651.00
Dunaway, J. E., et al, Wichita Falls	3,133.51	3,524.35
Dunaway, J. E., Wichita Falls	1,039.02	1,408.33
Dunigan Brothers, Breckenridge	1,905.75	2,142.74
Decatur Oil Co., Wichita Falls (6-30-30)	6,751.68	7,311.70
Decatur Oil Co., Wichita Falls (3-31-30)	3,086.44	3,125.88
Daniel Drilling Co., Wichita Falls	4,094.24	5,995.38
Deep Rock Oil Co., Fort Worth	5,101.65	3,365.04
Davis, Louis Reyman, Tulsa, Okla.	1.45	1.39
Davis, Beatrice H., Tulsa, Okla.	1.45	1.38
Dennis, J. S., Moran	2,228.10	2,708.46
Dominion Oil Co., Tulsa, Okla.	516.59	682.29
Darby Petroleum Corp. and C. C. Julian Oil & Royalties Co., Oklahoma City, Okla.	8,671.56	12,378.23
Dixie Oil Co., Inc., Tulsa, Okla.	103,804.28	77,594.97
Duffield and Howard Oil Co., Tulsa, Okla.	720.14	848.87
Danciger Oil & Refining Co. of Texas, Fort Worth	449,301.72	509,913.80
Deaner, J. J., Okmulgee, Okla.	476.07	317.15
Douglas Brothers & Johns, Electra	500.11	709.14
Douglas Brothers Oil Co., Electra	1,803.97	2,579.66
Douglas Production Co., Electra	1,463.68	1,990.58
DeMont, I. N., Cross Cut-Moran	56.00	62.72
Dunigan Brothers, Pampa	977.87	1,014.20
Dean Oil Co., Burkburnett	397.85	507.73
Den Wich Oil Co., Abilene	780.23	1,088.65
Delton, Jack, Oil Co., Fort Worth	993.71	1,367.39
Devonian Oil Co., Tulsa, Okla.	26,508.40	30,990.15
Duquesne Oil Corp., Eastland	70.47	78.00
Deering, John A., Houston	54,937.53	67,304.94
Delmar Oil Co., Bartlesville, Okla.	44,979.94	50,929.74
Dixon Creek Oil Co., Amarillo	96,688.75	97,070.83
Dye & Gillette, Tulsa, Okla.	7,554.73	9,160.00
Dunlop & Dawson, Ponca City, Okla. (6-30-30)	16,511.63	22,002.81
Dunlop & Dawson, Ponca City, Okla.	17,414.39	23,519.45
De Rosa Oil & Gas Co., Amarillo	36,434.25	47,388.10
Duro Oil Co., Houston	1,606.89	1,917.93
Dittman & Black, Fort Stockton (6-30-30)	6,497.14	5,499.33
E		
Eckert, F. H., San Antonio (3-31-30)	2,089.75	2,426.77
Eckert & Son, San Antonio (3-31-30)	784.35	906.55
Eckert, F. H., San Antonio (6-30-30)	2,183.36	2,649.27
Eckert & Son, San Antonio (6-30-30)	2,160.22	2,628.67
Empress Oil & Gas Corp., Coleman (6-30-30)	319.61	326.49
Elrod, Beabout & Sullivan, San Angelo (6-30-30)	2,028.37	2,700.12
Eurnor Oil Corp., Abilene	4,767.89	5,571.97
Edwards, R. J., Oklahoma City, Okla. (6-30-30)	217.04	292.50
Edwards, R. J., Oklahoma City, Okla. (3-31-30)	256.54	359.49
Edwards, R. J., Oklahoma City, Okla. (12-31-29)	221.98	344.07
Ellis & Anderson, San Antonio (6-30-30)	84.77	94.94
Ellis & DuBose, Fort Worth (6-30-30)	1,698.21	1,984.18
Elsik & Pamykal, Jr., Brenham	1,954.75	1,098.42
Electra Production Co., Inc., Electra	473.80	647.33
Eubank, R. O., and B. K., Cross Plains	2,003.20	2,794.24
Edmondson, J. M., San Antonio	1,076.54	1,201.57
Empire Gas & Fuel Co. Maine, Bartlesville, Okla.	651,667.41	736,071.96
Ellis & Lancaster, Beaumont	205.22	236.01
East Batson Oil Co., Batson	13,949.75	16,042.21
Ernest Oil Co., Rockdale	189.56	248.32
Edgington & Niles, Laredo	48,620.06	41,327.05
Erie Investments Limited of Texas, Toronto, Canada	398.57	494.76
Eggers, J. E., trustee, San Antonio	.....	.....
Eddy Oil Co., Beaumont	1,101.88	1,267.25
Ellis & Anderson, San Antonio	70.44	75.37
Eastland Oil Co., Fort Worth	85,035.14	19,213.42
Eddleman & Payne, Inc., Wichita Falls	4,002.07	5,618.11
Engle, E. A., Albany	4,185.39	5,803.95
Easton, E. S., Wichita Falls	878.06	1,226.79
Emerald Oil Co. of Texas, Winfield, Kans.	2,108.08	1,402.03
Eriewine, A. J., et als, Wilson, Okla.	1,510.12	1,938.12
Eppenauer, E. L., trustee, Fort Worth	1,297.22	1,747.41
El Rio Oil Co., Amarillo	174.93	153.05
Easter Oil Corp., Wichita Falls	42,941.94	56,384.59
F		
Fuchs, Fritz, Taylor (6-30-30)	225.00	270.48
Fulton, Tom, Wichita Falls (6-30-30)	2,019.77	2,872.11
Ferguson, W. R., Wichita Falls (6-30-30)	586.50	817.99
F. H. E. Oil Co., Sherman (6-30-30)	17,256.35	21,826.21
Fleming & Kimbell, Sherman (6-30-30)	4,695.07	3,990.71
Farmers State Bank, Burkburnett	505.99	735.02
Fox, Perry I., and William R. Thorsen, Mertzon	1,513.03	1,527.15
Falls Production Co., Wichita Falls	2,937.80	4,080.58
Farish & Ireland Lease, Houston	6,461.84	7,431.12
French Oil Corp., San Antonio	20,789.84	17,671.36
Fox & Adams, Burkett	10,376.71	12,156.67
Fulton, Tom, Wichita Falls	1,222.56	1,600.33
Faith Oil Corp., Wichita Falls	35.78	27.55
First National Bank of Wichita Falls, estate of G. W. Mennis, Wichita Falls	2,108.02	2,800.66
Franklin, Wirt, Ardmore, Okla.	285.34	407.46
Fraser, H. H., Wichita Falls	20,377.76	28,841.66
Flynn, W. B., Beaumont	5,757.78	6,535.86
Fresno Oil Co., Wichita Falls	30,101.17	38,830.51
F. H. E. Oil Co., Sherman	18,061.90	20,914.60
Fleming & Kimbell, Sherman	4,463.78	3,973.31
Ferguson, W. R., Wichita Falls	577.05	797.69
First National Bank of Wichita Falls, Wichita Falls	111.93	156.13
Fullerton, W. R., Wichita Falls (6-30-30)	763.85	1,032.99
Fullerton, W. R., Wichita Falls	1,573.61	2,108.91
Fullerton, W. R., Wichita Falls	809.76	1,095.92
Finston, Mark, Tulsa, Okla.	9,510.41	12,029.72
Fort Bend Oil Co., et al, Houston	16,379.48	17,899.48
Fain-McGaha Oil Corp., Wichita Falls	353,187.45	483,837.61
Farlyn Oil Co., Houston	10,939.52	7,876.48
Fisher, J. A., Wichita Falls	893.40	1,286.73
Freeman-Hampton Oil Corp., Wichita Falls	9,381.00	12,758.19
Forest Oil Corp., trustee, Luling	8,634.77	8,634.77
Frontier Oil Co., San Antonio	9,079.55	9,995.45
Fountain Production Co., Saratoga	1,526.65	1,526.65
Four Oil Co., Wichita Falls	1,203.01	1,597.94
Freeman, J. F., Wichita Falls	2,476.90	2,888.85
G		
Gulf Production Co., Houston	7,377,163.65	7,369,092.32
Group No. 1 Oil Corp., Fort Worth	741,874.21	1,048,129.15
Gibson Oil Corp., Amarillo (10-1-29 to 6-30-30)	.....	9,871.21
Grayburg Oil Co., San Antonio (2-1929 to 9-1930) (Pecos County River Bed Lease)	.....	4,355.03
Grand Falls Oil Co., Big Spring	1,503.62	1,394.40
Glodis Oil Co., Saratoga	2,935.75	2,813.42
Gray & Adams, Inc., Gainesville	2,567.68	2,687.15
Grassroots Oil Co., Fort Worth	1,573.62	2,189.49
Gordon, Ann B., Oil Co., Inc., Dallas	4,390.64	6,600.15
Gordon Oil Co. of Texas, Logan, Ohio	73.22	99.57
Goldsmith, N. D., Olney	5,429.02	7,732.95
Granite Oil & Gas Co., Ridgway, Colo.	385.38	557.45
Glass Brothers, Rosebud	511.07	651.62
Gaither Production Co., Rockdale	686.29	899.04
Gilbert Co., Beaumont	6,643.49	7,640.01
Guthrie Cole & Ferguson, Wichita Falls	681.43	900.05
Gorsuch Oil Co., Abilene	3,026.43	4,053.93
Gillman Brothers, Amarillo	1,126.51	1,268.41
Glover & Wall, Vernon	606.14	812.38
Glenridge Oil Corp., St. Louis, Mo.	3,122.24	4,198.53
Grisham-Hunter Corp., Abilene	3,481.37	4,451.15
Gunn Production Co., Cross Plains	592.60	848.13
Godley Oil & Gas Co., Dallas	22,854.12	22,392.44
Gopher Oil Co., Amarillo	1,572.37	1,880.69
G. & K. Production Co., Fredericksburg	1,082.34	1,213.67
Gandy & Peyton, Corsicana	1,545.00	1,914.80
Ginter-Jones Oil Co., San Antonio	413.19	483.43
Ginter-Lange Oil Co., San Antonio	1,321.64	1,612.40
Guernsey Oil & Gas Co., Pampa	5,612.28	7,027.83
Grandfalls Oil Co., Big Spring	1,601.78	1,467.61
Gilman & McMurray, Cisco	20,698.51	27,631.14
Gray, K. C., Vernon	351.96	445.31
Gates Oil Co., San Antonio	3,171.96	3,179.66
Gilliland-Rosser Oil Co., Wichita Falls	8,031.58	11,352.98
Gilliland, C. W., Wichita Falls	1,853.47	2,575.07
Goodwin & White et al, Breckenridge	377.45	480.94
Goodwin, P. B., trustee, Breckenridge	3,315.45	2,571.76
Graham & Harrison, South Bend	4,859.77	6,745.51
Galvez Oil Corp., Tulsa, Okla.	4,194.79	5,592.85
Gilman & Conway Brothers, Ranger	3,976.04	6,117.55
Green, W. J., Wichita Falls	137.87	168.20
Green & Owens, Brownwood	178.80	250.39
Gainesville Oil & Development Co., Gainesville	754.62	756.54
Golden West Oil Co., San Antonio	19,344.82	16,427.21
Graham & Lash, Cisco	140.55	187.34
Graham, W. T., Cisco	305.74	375.76
Gibson Oil Corp., Amarillo	33,687.70	37,116.11
Gordon & Morris, Breckenridge	2,670.61	3,686.34
Gates Oil Co., Ardmore, Okla.	2,521.83	3,484.16
Gardner, Wilson & McCaldin, Wichita Falls	847.52	1,200.03
Grayback Development Corp., Wichita Falls	31,491.89	40,244.23
Gates-Bacon-Lea, Wichita Falls	3,553.50	4,690.49
Golding & Cochran, Wichita Falls	44,200.58	60,819.64
Golding, Dudley S., Wichita Falls	22,106.10	21,021.45
Grayce Oil Co., Wichita Falls	18,766.06	25,726.99
Gibson & Johnson, Inc., Fort Worth	6,918.82	10,355.83
Gallagher & Lawson, Desdemona	254.61	313.66
Grayburg Oil Co., San Antonio	175,643.08	149,976.60
Gwynn-Boyd Drilling Co., Wichita Falls	5,897.58	8,034.12
Gwynn, P. F., Wichita Falls	1,268.57	1,860.84
Grayburg Oil Co., San Antonio	2,359.12	2,624.95
Gwynn, P. F., Wichita Falls	600.24	801.57
Golding Phillips Oil Co., Amarillo	1,701.02	1,343.80
Gillette, J. M., Tulsa, Okla.	340.39	509.31
H		
Humble Oil & Refining Co., Houston	7,519,384.95	8,443,088.22
Holloway, R. R., receiver, Brownwood	1,518.05	1,958.28
Harris & Simons, Tulsa, Okla.	4,882.26	3,515.22
Hawkins, W. L., Wichita Falls	2,185.00	2,939.86
Hill, W. R., trustee, Burkburnett	178.00	259.88
Hart Brothers, Baird	219.26	377.20
Hammond, J. G., Tulsa, Okla.	173.08	239.49
Hyde Production Co., Houston	1,295.40	1,475.22
Hyde, George, Houston	8,209.19	8,984.81
Hutton, A. G., Muenster (6-30-30)	302.50	293.42
Hampton & Wilson, Wichita Falls (6-30-30)	115.00	138.82
Hambleton, George, San Antonio (6-30-30)	497.19	456.06
Hoffman & Page Co., Eastland	21,556.40	29,088.95
Hankamer, Earl C., & Co., Sour Lake (12-31-29)	226.22	294.09
Hankamer, Earl C., & Co., Sour Lake (3-31-30)	293.90	308.59
Hankamer, Earl C., & Co., Sour Lake (6-30-30)	248.83	286.15
Hamil & Hamil, Bay City	5,691.99	4,838.18
Hart Oil Corp., Fort Worth	181.65	249.80
Huffman Oil Corp., Amarillo	3,416.59	3,252.63
Houston Oil Co. of Texas, et al, Houston	575,202.91	529,774.52
Haskell, Frank, Tulsa, Okla. (6-30-30)	1,889.84	2,333.52
Haskell, Frank, Tulsa, Okla.	1,806.23	2,236.06
Hanlon Gasoline Co., Tulsa, Okla.	1,391.29	1,802.30
Hickok Producing & Development Co., Toledo, Ohio	131.86	165.97
Hope Oil & Gas Co., Fort Worth	9,880.04	13,073.24
Hankamer, Earl C., & Co., Sour Lake	206.92	237.96
Huber, J. M., Petroleum Co., Borger (6-30-30)	28,969.23	29,099.45
Huber, J. M., Petroleum Co., Borger	63,432.82	62,907.94
Hutton, A. G., Muenster	797.75	765.84
Hedrick-Camp Drilling Co., Wichita Falls	12,030.55	14,978.80
Howard, Duffield & Berlin, Tulsa, Okla.	988.15	1,168.47
Hickey, T. J., et al, Corsicana	59.19	78.11
Houghland Production Co., Dallas	2,195.50	2,572.17
Herring, S. C., Brownwood	652.00	967.02
Hamon, Jake L., Ardmore, Okla. (6-30-30)	1,223.63	1,811.19
Hickory Oil & Gas Corp., Fort Worth	5,973.84	8,211.30
Hyde & James, Albany	1,416.24	1,764.07
Hadlock Oil Corp., El Paso	922.45	937.76
Hambleton, George, San Antonio	361.81	405.27
Hemby, J. M., Electra	699.66	962.63
Harper Petroleum Corp., Bryson	26,402.37	36,111.95
Hobson & Vorhees, San Antonio	547.24	667.63
Hughes, J. K., Oil Co., Mexia	18,069.62	23,309.78
Hamilton, Walter R., trustee, San Antonio	3,968.22	5,118.96
H-Y Oil Co., Inc., Fort Worth	18,433.45	25,138.71
Hefley, McIntosh & Thomas, Cameron	546.15	696.35
Hardy Oil Co., Wichita Falls	1,470.12	1,988.80
Hamilton & Martin, Wichita Falls	1,171.12	1,559.38
Hobbs, Ferguson & Neeley-LeRoy Adams-Addison H. Gibson, Tulsa, Okla.	3,407.32	3,948.34
Hobbs Oil Co., Tulsa, Okla.	1,213.24	1,699.86
Hoppes, W. T., Burkburnett	26.34	35.82
Hoppes, W. T., Burkburnett	555.01	772.69
Howard Petroleum Corp., Tulsa, Okla.	1,025.38	1,218.65
Hunter Oil Corp., Chicago, Ill.	43,263.24	60,153.11
Houston Production Co., Houston	50,463.78	60,525.17
Hardie, J. M., & Co., Sour Lake	256.94	295.48
Holbrook & Woods, Wichita Falls	5,650.29	7,383.06
Hamilton, W. B., Wichita Falls	232.27	244.29
Helvetia Oil Co., San Antonio	10,954.79	12,192.73

(Continued on Next Page)



meets every demand of high pressure drilling *with a higher factor of safety* « « « «

Champion All-Steel Rotary Hose is made entirely of specially treated steels, each section and part being constructed to meet a particular wear-pressure-resistance problem.

It is blow-out proof, being sufficiently strong to withstand much higher pressures than those encountered in drilling practice.

As the joint pack-off becomes tighter as pressures go higher, it is absolutely leak-proof. It swivels in any direction and from any rig position, regardless of pressure, without binding, springing, pulling in two, or in any other way becoming unfit for use.

Bulletin No. 202 contains complete information, installation instructions and photographs of installations. Supplied on request.

Gulf-Mid-Continent Champion All-Steel Rotary Hose installation. Note seven joints used for hose assembly.

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30 Cortlandt St.
New York

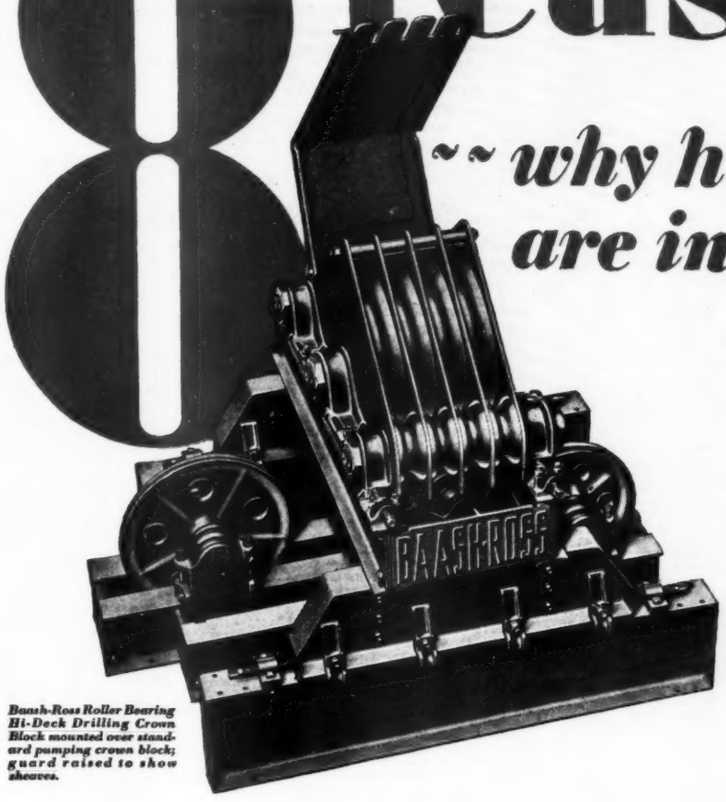
TEXAS GROSS PRODUCTION, THIRD QUARTER (Continued)

Name and address—	Barrels	Value
Home Oil & Gas Co., Inc., Albany	1,743.96	2,209.52
Hyer, Fred, Fort Worth	17,890.50	14,765.84
Hawley, J. A., guardian, Hawley, Kevin (minor), Ottawa, Ontario	191.65	249.98
Horn, T. W., Houston	1,426.95	1,640.99
Hunter, T. F., Wichita Falls	47,252.13	63,836.09
Herrogan Oil Corp., Pampa	14,450.32	15,041.39
Hill & Dowell, Batson	10,677.56	12,278.55
Hemisphere Oil Corp., New York, N. Y.	17,945.16	22,507.38
Hammond & Waggoner, Wichita Falls	576.68	827.54
Herbert Oil Co. of Texas, Fort Worth	6,153.66	8,075.30
Humphreys Brothers, Inc., Houston	1,464.58	1,948.03
Humphreys Corp., Houston	282,787.53	324,616.78
H. B. J. Oil & Gas Trust, Baltimore, Md.	1,785.16	2,442.47
Hamon, Jake L., Ardmore, Okla.	24,249.76	33,874.33
Harrison Oil Co., Houston	80,330.28	115,919.09
Hines, Harry, Wichita Falls	2,652.71	3,663.67
Halmack Oil Co., Dallas	198.10	293.36
Hammon, W. H., Wichita Falls	24,891.43	35,608.27
Hammon & Heyser, Wichita Falls	10,674.10	14,247.81
Holmes & Huey, Borger	2,851.08	2,965.12
Houston Gulf Gas Co., Houston	8,244.94	7,074.85
Harwell, E. P., Tulsa, Okla.	1,782.34	2,461.44
Hart Brothers, Baird	232.85	276.03
Hammond, J. G., Tulsa, Okla.	148.83	212.62
Hemby, J. M., Electra	148.42	204.81
Holmes, Hill, Seibold & Holmes, Amarillo	14,351.43	19,577.44
Holmes Brothers, Amarillo	17,817.67	23,583.55
Holmes, W. H. and W. W., Amarillo	4,046.57	5,240.23
Hart, J. R. and M. D. Heist, Baird	505.00	636.30
Howard County Oil Corp., Fettus	26,795.44	22,113.47
Handrick, August, Moran	149.29	163.12
Hamilton, W. L., Bridgetown	906.98	1,296.99
Holcombe, Thomas, Wichita Falls	1,863.34	2,647.68
Hitchman & Howard, Inc., San Antonio	1,952.71	2,300.37
Heidrich, E. C., Jr., Amarillo	4,517.24	4,659.45
Henson, G. D. and R. V. Tidwell, Graham	6,113.42	8,265.83
I		
Ingram, J. A., Shawnee, Okla.	473.37	484.61
Irick Oil Co., Waskom	260.20	338.71
Investors Oil & Gas, Sioux Falls S. Dak.	1,562.24	2,039.07
Big Indian Oil & Development Co., Gainesville	1,059.42	1,398.43
Infield Petroleum Co., Austin	534.60	592.12
Independent Oil & Gas Co., Tulsa, Okla.	371,200.86	347,094.18
Isaacs, B. K., receiver, J. K. Hughes Dev. Co., Fort Worth	1,123.73	1,224.87
J		
Julian, C. C., Oil & Royalties Co. et al, Oklahoma City, Okla. (6-30-30)	10,538.86	15,359.36
Jones, J. F. et al, Abilene (6-30-30)	134.31	168.53
James, Tom, Albany	6,085.17	8,353.06
Jackson Co., The, San Antonio	903.52	977.90
Jones, W. A., Minerva	1,756.77	2,178.54
Jones, Edwin M., San Antonio	143,240.38	131,084.12
Jones, O. P. and C. J. Oates, Amarillo	1,731.14	1,850.13
Jones, J. A., Moran	235.87	340.05
Junker, W. H., et al, Olney	156.66	183.29
Janellen Oil Co., Brownwood	105.60	116.12
Jones, J. E., Wichita Falls	2,590.86	3,621.97
Judson Oil Co., Tulsa, Okla.	6,401.18	9,039.16
Julian, C. C., Oil & Royalties Co. et al, Oklahoma City, Okla.	17,372.39	24,844.53
Jackson, J. S., trustee, Sour Lake	2,756.02	3,169.43
Justin Oil Corp., Wichita Falls	6,938.56	9,333.69
Jackson, T. H., Sipe Springs	86.22	101.01
Jonray Oil Co., San Antonio (6-30-30)	1,805.25	1,937.03
Jonray Oil Co., San Antonio	1,770.08	1,911.72
Julia Oil Co., Sour Lake	3,206.95	3,688.00
Johnson Brothers, San Antonio	5,274.04	6,336.35
Jones, Hugh, Burkburnett	2,742.89	3,579.87
K		
Koenig, Max W., Oakland, Calif. (6-30-30)	17,017.13	14,339.39
Keller, J. E., Iowa Park ((3-31-30)	78.61	103.77
Keller, J. E., Iowa Park (6-30-30)	242.66	335.11
Kleinfelder, B. F., Breckenridge	293.79	389.26
Kerr, T. P., Corsicana	597.58	789.71
Kimbell, G. T., & John L. Bostic, Burkburnett	4,478.25	6,090.43
Kimmell & Woofter, Wichita Falls	4,079.99	5,777.92
Kuhlemeier-Kleiner Oil Co., Cisco	1,534.15	2,131.91
Kokomo Pet. Co., Gorman	260.83	345.60
Keck Investments Co., Los Angeles, Calif.	5,243.71	4,509.59
Kewanee Oil & Gas Co., Titusville, Pa.	154,828.63	214,096.66
Kurz Oil Co., Somerset	457.22	466.37
Kavanaugh Petroleum Co., Houston	3,832.12	5,077.55
King, R. A., Tr., Wichita Falls	746.75	634.74
Karona Oil Co., Refugio (6-30-30)	5,812.44	4,701.25
King & Daniel, Wichita Falls	6,041.23	8,161.52
Knox, D. M., Graham	28,054.21	39,053.00
Kidney-Kamon et al, Fort Worth	3,411.55	4,741.28
Kistler, Frank E., & Co., San Antonio	1,720.67	1,544.20
Karona Oil Co., Refugio	3,584.56	3,046.88
Kohlman, Richard, Iowa Park	529.00	666.54
King Royalty Co., Wichita Falls	136,407.86	136,946.84
Kleiner, Charles J., Cisco	26,089.71	35,504.65
Kemrow Co., Wooster, Ohio	12,517.11	17,298.42
Koenig, Max W., Oakland, Calif.	18,319.53	15,571.60
Knotts, Nona A., Wichita Falls	486.09	689.97
Kurz, A. A., Somerset	282.63	335.86
Kisk Oil Co., Wichita Falls	305.89	354.32
Klemcke, George, Tr., Von Ormy	1,377.54	1,440.57
Kahle, Gracey & Diver, Bridgeport, Ill.	2,635.95	1,896.44
Kate Bell Oil Co., Dallas	1,003.41	1,368.31
Kay, A. W., & W. B. Fultz, John Kisinger Farm, Graham	6,328.95	8,841.61
Kay, A. W., & W. B. Fultz, J. J. Scott Farm, Graham	3,131.18	4,300.49
Kay, A. W., Recr., Jones et al, J. E. Keen Farm, Graham	904.95	1,230.72
Keener Oil & Gas Co. of Texas, Tulsa, Okla.	3,767.20	4,930.45
Kent, G. C., Corsicana	18,180.60	21,272.44
Kolp, C. F., Electra	19,771.30	26,748.19
Keystone Production Co. of Texas, Fort Worth	2,617.54	3,680.17
Kaufman, L., San Antonio	428.76	437.33
Kirby Petroleum Co., Houston	79,363.52	65,077.44
Kelly, George L., Tr., Wichita Falls	397.54	540.64
Killam, O. W., Laredo	235,002.62	199,752.22
L		
Lela Oil & Gas Co., Amarillo (6-30-30)	1,275.93	1,121.11
Lyne Oil Co., Inc., Brenham (6-30-30)	935.00	626.45
Lyne Oil Co., Inc., Brenham (3-31-30)	690.00	465.75
Lyne Oil Co., Inc., Brenham (12-31-29)	270.00	182.25
Loggie & Arendt Oil Co., Inc., Albany	2,859.00	3,487.98
Luling Oil & Gas Co., San Antonio	29,699.21	25,244.33
Lytle, C. F., Mexia	10,085.75	13,978.74
Lewis, J. E., et al, Eastland	971.77	1,295.67
Lloyd Oil Corp., Fort Worth	62,549.76	78,187.18
Ledger Oil & Gas Co., Brownwood	871.36	1,206.74
Little Caddo Syndicate, Fort Worth	1,224.71	1,704.86
Lowery Oil Corp., Burkburnett (March and June, 1930)	3,035.53	3,824.77
Lefors Petroleum Co., Lefors	33,687.51	40,474.74
Linedo Oil Co., Lincoln, Neb.	564.34	734.68
Lomax, Thornton, Jr., Wichita Falls	2,260.22	3,079.90
Landreth Production Corp., Fort Worth	299,291.92	261,405.56
Louisiana Oil Refining Corp., Shreveport, La.	517,723.59	590,541.33
Lake View Oil Co., Sour Lake	10,988.58	12,636.88
Little, William, Breckenridge	278.77	349.84
Last Chance Gas Co., Pampa	893.71	529.46
Letwin & Lippitt, Breckenridge	12,778.29	17,230.75
Lackey, W. G., Co., Tulsa, Okla.	1,916.06	2,553.86
Leiser-Rochmill Production Co., Inc., Fort Worth	1,406.86	1,911.74
Lake Graham Oil Co., Houston	2,261.41	2,772.75
Lowenstein Oil Co., Rockdale	977.63	1,270.91
Lewis, J. E., & Co., Eastland	2,425.04	3,323.48
Lido Oil Co. & McGinley Sigler Co., Wichita Falls and Fort Worth	21,203.11	25,630.05
Lion Oil Refining Co., El Dorado, Ark.	573,965.69	444,578.21
Long, Roy, Oil Co., Navasota	1,486.42	2,015.27
Lebow, C. H., Tulsa, Okla.	1,220.00	1,787.28
Lewis Production Co., Pittsburgh, Pa.	37,036.90	48,377.60
Lockhart & Co., Los Angeles, Calif.	86,813.99	92,797.43
Lesh & McCall, Nocona	16,223.72	10,951.01
Little Flower Oil Co., St. Louis, Mo.	439.70	533.93
Leonard Oil Co., Somerset	181.79	194.54
Leonard, George, Somerset	910.18	961.82
Lowe, Delaney & Carter, De Leon	4,969.62	6,372.27
Langford Oil Co., Inc., Wichita Falls	1,352.55	1,830.08
Lesh, Kilcrease & Co., Nocona	1,386.40	1,187.32
Lesh, John L. & Co., Wichita Falls	5,581.65	4,093.22
Lawson, Eugene B., Tulsa, Okla.	45,978.44	61,951.98
Long, L. A., Graham	39,927.96	57,621.59
Lloyd Oil Corp. of Texas, Fort Worth	31,147.43	38,934.28
Lela Oil & Gas Co., Amarillo	759.32	584.67
Lone Star Gas Co., Dallas	39,556.00	58,078.93
Long, C. B., et al, Wichita Falls	291.48	365.90
La Salle Petroleum Co., Tulsa, Okla.	3,651.57	4,834.71
Lee & Scott, Inc., Houston	1,705.05	1,960.80
Lee & Wilson, Houston	5,425.37	5,982.37
Lee, Homer, Wichita Falls	11,290.27	15,526.74
Mc		
McHugh, G. E., Graham (6-30-30)	200.01	279.01
McCarter, R. C., Rising Star	526.80	832.76
McClintock, J. G., Amarillo (6-30-30)	.....	10,450.57
McAlbert Oil Co., Inc., Houston	128,731.90	140,039.87
McNallen & Griffin, Tulsa, Okla.	5,083.43	6,977.05
McCormick & Noack-Wooten, Rockdale	69.38	88.46
McChesney, Nancy, Olney	5,136.47	6,405.83
McMurray, J. L., et al, Cisco	1,796.13	2,626.04
McCarty Oil Co., Wichita Falls	78,371.54	113,010.71
McMurray, Root & Rhodes, Eastland	828.00	1,300.00
McGinley-Sigler Co., Fort Worth	5,253.95	6,285.42
McCrary, E. W., Tulsa, Okla.	5,646.58	7,143.89
McNamara Oil Co., Beaumont	2,490.26	2,863.79
McDonald & Campbell, Dallas	8,811.20	10,705.65
McDaniel Oil Corp., Cisco	3,871.45	5,740.12
McCutchen, C. E., Wichita Falls	243.33	339.73
McCutchen, C. E., Tr., Wichita Falls	4,768.15	6,657.73
McLester Oil Co., Eastland	8,672.82	13,471.66
McBride, W. C., Inc, St. Louis, Mo.	5,777.56	7,153.19
Roeser & Pendleton, Inc. (McGraw Oil Co.), Fort Worth	821.88	1,049.33
Roeser & Pendleton, Inc. (McGraw Oil Co.), Fort Worth	209.42	251.63
McMan Oil & Gas Co., Tulsa	1,073,385.27	1,023,333.24
McIlroy Oil Co., Amarillo	34,260.23	34,365.47
McJunkin, Florence T., et al, Tulsa, Okla.	747.94	903.88
M		
Moran Co., The, Wichita Falls	14,984.67	19,784.85
Maxwell, J. C., Fort Worth	49,523.60	43,341.75
Manning Oil Corp., Fort Worth (6-30-30)	2,701.91	3,142.38
Manning Oil Corp., Fort Worth (3-31-30)	2,205.55	2,499.51
Martin, Drake & Jones, Houston (3-31-30)	21,327.22	23,109.99
M. & V. Oil Co., Wichita Falls (6-30-30)	4,377.78	6,111.10
C. S. Messenger et al, per Aug., 1929, to June 30, 1930, Fort Stockton	6,402.56	6,065.14
Mid-Continent Holding Corp., Wichita Falls (6-30-30)	14,195.01	20,814.27
Mid-Continent Holding Corp., Wichita Falls (3-31-30)	14,920.05	21,131.41
Marts, E. R., Dallas (6-30-30)	738.77	546.69
Martin, Drake & Jones, Houston (6-30-30)	20,753.49	23,664.57
Meredith & Benton & Curt Horrmann, Cisco (6-30-30)	584.00	798.89
May, F. N., Santa Anna (6-30-30)	195.55	242.64
Mancill, R. W., Cisco (6-30-30)	174.96	195.95
Matador Oil Corp., Bartlesville, Okla. (July 1928, to Apr. 30-30)	54,752.34	35,589.01
Marrs McLean, Beaumont	34,748.73	33,011.29
Mills & Garity, Corsicana	2,147.58	2,577.09
Mancill, R. W., Cisco	111.25	130.80
Minerva Petroleum Co., Minerva	794.39	944.71
Minor Oil Co., Beaumont	8,487.26	9,760.35
Montgomery-Rea-Montgomery, Sedwick	1,266.60	1,717.40
Morgan, et al, Ray, Fort Worth	870.16	1,236.61
Milham Corp. of Texas, Fort Worth	1,668.03	2,362.70
Menke, John G., Wichita Falls	1,039.79	1,450.98
Madden & Hunt, Olney	13,517.84	18,804.27
Madden, E. B., Olney	17,092.11	24,224.70
Margarett Oil Co., Albany	683.00	881.00
Moody Corp., Houston	501,336.27	448,430.65
Medio Oil Co., San Antonio	900.63	1,096.13
Mecam Oil Co., Liberty	2,921.00	2,921.00
Moody Seagraves Producing Co., San Antonio	589,431.79	582,139.59
Mid-Continent Petroleum Corp., Tulsa, Okla.	26,834.29	25,800.81
Marts, et al, E. R., Dallas	49,394.15	38,205.15
Margaret Oil Co., Cross Plains (3-31, 6-30, 9-30-30)	874.77	1,158.03
Mozzie Oil Corp., Eastland	957.23	1,201.32
Mendenhall Oil Co., Cisco	1,059.07	1,568.50
Macknold Co., San Antonio	185.03	190.75
Mount & Lee, Inc., Wichita Falls	1,442.11	1,932.52
Moore, N. A., Eastland	591.92	769.58
Major, A. W., Laredo	2,088.12	1,774.90
Martin, N. H., Wichita Falls	17,844.55	20,105.36
Martin & Hamilton, Wichita Falls	3,119.07	4,047.25
Meridian Petroleum Corp., Tulsa, Okla.	4,288.95	5,536.69
Meredith & Benton & Curt Horrmann, Cisco (9-30-30)	1,036.50	1,487.95
Midwest & Gulf Co. of Texas, Tulsa, Okla.	1,634.40	1,757.69
Meredith & Gant, Wichita Falls	1,514.52	2,454.09
Magnolia Petroleum Co., Dallas	2,843,473.38	3,000,489.72
Murchison Oil Co., Fort Worth	94,940.67	74,538.75
Moore, F. L., Trustee, Tulsa, Okla.	1,688.93	2,259.62
Minntex Oil Corp., Wichita Falls	744.15	896.95
Merrick & Lamb, Ardmore, Okla.	33,398.69	31,415.52
Merrick & Bristow, Ardmore, Okla.	45,598.46	34,062.16
Mordyan Petroleum Co., Pampa	56,080.51	67,411.72
Midland Oil Co., Fort Worth	401.45	517.85
Mitcham, G. P., Cisco	816.45	1,035.92
Moss, Urschel & Keys, Dallas	6,737.32	8,691.13
Moss & Urschel, Dallas	12,860.52	16,438.35
Midwest Exploration Co., The, Denver, Colo.	167,824.80	209,329.84
Mann & Forbes, Graham	2,591.43	3,558.20
M. & V. Oil Co., Wichita Falls	2,986.37	3,925.82
Merrick & Goldsmith, Wichita Falls	4,502.20	6,438.14
Merrick, John F., Wichita Falls	461.54	595.36
Merrick & Belcher, Wichita Falls	6,473.50	10,160.37
Marine Corp., The, Dallas	3,571.01	3,014.89
Medina Oil & Gas Association, San Antonio	128.45	137.44
Mues & MacDermott, Fort Worth	389.24	515.74
MacDermott, W. F., Fort Worth	582.11	778.28
Mill Bennett Production Co., Houston	405,947.58	440,295.47
Minnehoma Oil & Gas Co., Tulsa, Okla.	2,071.61	1,916.23
McFall, J. M., Wichita Falls	730.01	901.70
Mid-Kansas Oil & Gas Co., Findlay, Ohio	3,218,001.87	2,646,006.29
Madison Oil & Gas Co., Electra	3,883.02	5,683.32
Marnet Oil & Gas Co., Tulsa, Okla.	4,957.53	6,594.58
Millikin, L. L., Burkburnett	281.27	345.23
Massie, J. H., Wichita Falls	61,264.02	83,853.53
Mann, Floyd, Graham	1,786.92	2,460.82
Moran Drilling Co., Wichita Falls	138.44	179.69

(Continued on Next Page)

8 reasons

~~ why hundreds are in service!



Baash-Ross Roller Bearing Hi-Deck Drilling Crown Block mounted over standard pumping crown block; guard raised to show sheaves.

1. Block is designed to fit any regular derrick, and may be installed in four or five hours less time than any other block.

2. Design provides extreme rigidity, permitting heavier loads at maximum speeds with absolute safety.

3. Base beams are bolted to the water table so that vertical strains are equally distributed over the four corners of the derrick. I-Beam construction provides a 4-way adjustment for centering the sheave assembly directly over the hole.

4. In use, the crown is set with the axis of the sheaves parallel with the axis of the draw works. Traveling block and wire lines travel vertically parallel, with no side drag.

5. The pulling load is equally distributed over the sheaves and comes in the exact center of each sheave groove, thus eliminating side friction or slippage, and prolonging the life of both lines and sheaves.

6. A steel guard over the top of the sheaves prevents any possibility of the lines jumping the sheaves, and also keeps out dust and dirt.

7. The blocks are easily disassembled and may be changed over from a four-sheave to a five-sheave assembly, in the field, in a few hours time.

8. The sheave and bearing assembly of the Hi-Deck Crown Block is interchangeable with the sheave and bearing assembly of the Baash-Ross Roller Bearing Traveling or Casing Block.

BAASH-ROSS

ROLLER BEARING HI-DECK Drilling Crown Block

Through sheer dependability, advanced mechanical principles and heavy-duty construction, the list of Baash-Ross Crown Block installations has mounted into the hundreds! Operators are urged to write for new bulletin describing this equipment...just off the press.

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*Company*_____

*Address*_____

Oil & Gas Journal, Dec. 4, 1930

TEXAS GROSS PRODUCTION, THIRD QUARTER (Continued)

Name and address—	Barrels	Value
Mook-Texas Oil Co., Fort Worth (6-30-30)	9,395.17	12,749.16
Mook-Texas Oil Co., Fort Worth (9-30-30)	7,372.97	9,984.78
Mueller, Alvin P., Rec. for D. D. Baker, Seguin	73,293.38	67,959.28
Mayberry Co., C. R., Laredo	2,154.79	1,831.57
Marshall, George S., Laredo	4,157.73	3,326.18
Magee, R. B., Wichita Falls	4,291.58	1,866.10
Moody Seagraves Producing Co., San Antonio	589,431.79	582,139.59
Meredith & Gant, Wichita Falls	2,114.32	2,454.09
Minntex Oil Corp., Wichita Falls	744.15	896.95
Mid-Continent Holding Corp., Wichita Falls (9-30-30)	16,044.70	24,082.86
N		
Nordan & Morris, Laredo (6-30-30)	1,853.88	1,575.81
Newton & Lillie, Shreveport, La.	17,544.92	20,176.65
National Oil Co., San Antonio	652.82	660.33
Navarro Oil Co., Houston	177,526.32	195,344.47
Noack & Lanning, Rockdale	76.58	97.64
Noack Oil Co., Rockdale	1,180.91	1,544.32
Noack & Lanning, Rockdale	223.30	292.52
Nordan & Morris, Laredo (9-30-30)	602.57	512.18
Newton-Palmer Oil Co., Rockdale	374.38	490.43
Nabob Oil & Gas Co., Amarillo	26,701.31	32,605.11
Number Nine Oil Co., Tulsa, Okla.	2,702.86	3,700.97
Nutt & Gates, Wichita Falls	2,259.71	3,310.46
Nix & Dale, Wichita Falls (6-30-30)	2,560.86	3,357.10
Nix & Dale, Wichita Falls (9-30-30)	2,092.82	2,778.50
Nash, Windfohr & Perry, Austin	51,888.45	51,888.45
North Fork Oil Co., Amarillo	4,371.03	4,940.98
Nash & Windfohr Oil Corp., Graham	171,477.80	249,042.60
Newport & Ohio Petroleum, Newport, N. Y.	392.87	536.97
O		
Oil Fields Corp. of Arkansas, El Dorado, Ark.	52.00	65.00
Omilak Oil Co., Somerset (6-30-30)	178.03	196.42
Owenwood Pool No. 3, Fort Worth	3,808.08	4,961.80
Oil Investment Co., Wichita Falls	2,064.91	2,783.50
Oil Royalty Corp., Brownwood	181.07	177.44
Olean Petroleum Co., Bristow, Okla.	16,238.25	13,212.15
O'Neil, John, Wichita Falls	12,511.27	17,928.64
O'Brien, W., Amarillo	659.57	666.59
Oriental Oil Co., Dallas	431.46	435.23
Orange Petroleum Corp., Orangefield	24,306.32	27,645.54
Oasis Oil Co., Wichita Falls	161.80	210.43
Owen-Sloan Oil Co., Philadelphia, Pa.	64,179.18	46,730.43
Omslak Oil Co., Somerset (9-30-30)	150.76	167.95
Ohio Somerset Oil Co., The, Cleveland, Ohio	1,177.87	1,236.76
Olney Oil & Refining Co., Wichita Falls	254.52	334.28
P		
Penn Oil Co., Dallas (6-30-30)	21,662.77	21,844.25
Prairie Oil & Gas Co., The, Independence, Kans.	452.31	632.28
Penn Oil Co., Dallas (3-31-30)	17,459.67	18,777.55
Penn Oil Co., Dallas (6-30-30)	11,602.35	13,211.57
Putnam Supply Co., Putnam (6-30-30)	466.40	585.39
Putnam Supply Co., Putnam (3-31-30)	407.28	476.54
Putnam Supply Co., Putnam (12-31-29)	483.92	677.48
Pennowa Oil & Gas Co., Skiatook, Okla. (6-30-30)	10,280.93	11,387.39
Pinto Oil Co., Mineral Wells (3-31-30)	127.26	138.71
Pinto Oil Co., Mineral Wells (6-30-30)	101.10	108.17
Palmer Freddie, Oil Co., Rockdale (6-30-30)	141.06	161.69
Philp Brothers, Beaumont	2,809.91	3,231.40
Piper, L. E., Trustee, Vernon	1,875.54	2,516.93
Pettit Oil Corp., Trees, La.	1,506.21	2,212.99
Permian Oil Co., Eastland	9,922.95	15,53[illegible].65
Powell, J. L., Wichita Falls	350.69	517.72
Price, Russell & Co., Ranger	3,586.47	5,0[illegible]4.76
Panhandle & Santa Fe Ry Co., Wichita, Kans.	6,206.85	4,034.45
Preston Oil & Gas Co., Brownwood	287.91	375.61
Poor Boy Oil Co., Rockdale	310.00	395.25
Powers Production Co., Houston	2,719.17	2,544.89
Pure Oil Co., Chicago, Ill.	448,275.02	524,839.88
Phair, F. L., Houston	175.50	118.46
Pivoto, M. E., Sour Lake	7,331.28	8,430.96
Portland Drilling Corp., Wichita Falls	720.75	983.23
Pioneer Oil, Gas & Refining Co., Danville, Ill.	1,022.77	1,201.21
Pandem Oil Corp., Wichita Falls	23,981.87	32,037.75
Perkins & Snider Lease, Wichita Falls	5,095.74	7,477.12
Piney Oil & Gas Co., New York, N. Y.	4,659.13	4,211.23
Pollard, W. E., and C. E., Pampa	4,757.33	5,780.52
Pure Oil Co., Chicago, Ill.	2,260,006.48	2,758,728.87
Pois, M., trustee, Wichita Falls	136.51	188.14
Pois, Fine & Schulz, Wichita Falls	622.99	890.84
Pois, M., et al, Wichita Falls	3,235.78	4,552.49
Proctor, George, Wichita Falls	15,153.44	22,095.85
Prechel, Walter, Wichita Falls	2,548.95	3,616.51
Powell, H. J., trustee, San Antonio	5,256.64	5,109.09
Peery, Thomas H., Wichita Falls	5,756.11	8,177.62
Producers & Refiners Corp. of Texas, Independence, Kans.	8,034.51	10,895.53
Putnam Oil Co., Tulsa, Okla. (9-30-30)	34,659.49	46,447.13
Palmer & Burch, Inc., Wichita Falls	11,339.36	15,894.52
Palmer & Burch, Inc., Wichita Falls	1,587.42	2,167.67
Phillips, J. R., Amarillo	2,422.79	2,186.20
Prairie Oil & Gas Co., Independence, Kans.	1,058,004.21	1,186,701.11
Petroleum Producers Co., Wichita Falls	83,263.95	117,963.65
Panhandle Refining Co., Wichita Falls	148,022.54	198,285.37
Phillips Petroleum Co., Bartlesville, Okla.	183,363.73	146,455.47
Phillips Petroleum Co., Bartlesville, Okla.	13,228.34	19,539.57
Phillips Petroleum Co., Bartlesville, Okla.	908.98	1,307.67
Phillips Petroleum Co., Bartlesville, Okla.	210,069.72	269,179.38
Phillips Petroleum Co., Bartlesville, Okla.	40,235.71	56,371.11
Phillips Petroleum Co., Bartlesville, Okla.	877.37	1,173.53
Phillips Petroleum Co., Bartlesville, Okla.	6,424.75	8,581.22
Phillips Petroleum Co., Bartlesville, Okla.	26,783.95	35,724.87
Phillips Petroleum Co., Bartlesville, Okla.	9,727.38	13,665.59
Phillips Petroleum Co., Bartlesville, Okla.	763.79	1,089.61
Phillips Petroleum Co., Bartlesville, Okla.	4,904.76	4,712.05
Phillips Petroleum Co., Bartlesville, Okla.	835,989.08	1,047,501.90
Phillips Petroleum Co., Bartlesville, Okla.	9,936.04	14,811.74
Phillips Petroleum Co., Bartlesville, Okla.	771,966.00	783,911.34
Pemeta Oil Co., Fort Worth	3,781.95	5,168.88
Paraffine Oil Co., Houston	8,092.58	9,306.48
Poole, B. O., Batson	2,493.61	2,867.65
Peckham, F. W., Stamford	890.00	673.05
Py-Tex Oil Co., Brownwood	882.09	1,271.44
Porterfield, R. R., Graham	5,758.29	7,813.91
Pace, George L., Wichita Falls	3,764.47	4,642.92
Producers Supply & Tool Co., Marietta, Ohio	10,544.07	11,994.09
Pitzer & West, Breckenridge	12,446.34	16,989.27
Primrose Oil Co., Somerset	1,130.19	1,298.72
Paggi Brothers Oil Co., Beaumont	7,198.24	8,277.95
Paggi, Charles, & Co., Beaumont	780.60	897.69
Palmer, Freddie, Oil Co., Rockdale (9-30-30)	143.78	188.36
Plymouth Oil Co., Pittsburgh, Pa.	43,865.50	36,809.67
Penn Oil Co., Dallas (9-30-30)	16,138.57	17,247.55
Perkins, J. J., Wichita Falls	1,041.26	1,038.34
Producers Drilling Co., Wichita Falls	1,448.04	1,964.35
Palo Duro Oil Co., Amarillo	2,058.13	2,106.03
Pharis Oil Co., Amarillo	240.70	210.61
Pilkerton, F. L., Burkburnett	1,182.80	1,550.09
Pace & Ward, Breckenridge	1 704.61	2,243.05
Penn-Tex Oil Co., San Antonio	1,781.84	2,018.72
P. & M. Oil Co., Oil City, Pa. (3-31-30)	73.75	98.51
P. & M. Oil Co., Oil City, Pa. (6-30-30)	36.40	52.05
P. & M. Oil Co., Oil City, Pa. (9-30-30)	73.23	103.40
Pelwin Oil Corp., Wichita Falls	632.63	837.08
Pecos Crude Oil Purchasing Co., San Angelo	219.30	166.44
Pecos Crude Oil Purchasing Co., San Angelo	1,297.56	519.03
Perkins & Cullum, Wichita Falls	173,262.50	232,783.29
Patterson Properties Corp, Fort Worth (10-1-29 to 6-30-30)	4,914.36	7,271.32
Q		
Quinn, J. W., et al, Eastland	2,097.72	3,073.14
Quincey Oil Co., Vernon	131.47	185.37
R		
Rockdale Junior Oil Co., Rockdale	76.24	97.21
Reed, Crenshaw & Glass, Nowata, Okla. (6-30-30)	10,510.12	14,598.81
Ramsey & Decker, Breckenridge (3-31-30)	61.16	71.56
Ramsey & Decker, Breckenridge (12-31-29)	542.42	918.09
Ross, Segunda, Oil Co., Laredo (6-30-30)	422.57	359.19
Ross, Segunda, Oil Co., Laredo (3-31-30)	368.17	276.13
Ross, James P., Laredo (3-31-30)	2,887.26	2,165.43
Ross, James P., Laredo (6-30-30)	2,650.19	2,262.55
Ross, Amigos, Oil Co., Laredo (3-31-30)	10,367.82	7,929.46
Ross, Amigos, Oil Co., Laredo (6-30-30)	9,501.70	8,076.44
Roberts, H. W., Wichita Falls	3,041.77	2,919.73
Richardson Trust Co. and M. L. Dresser, Markley	1,747.38	2,201.94
Rexal Petroleum Corp., San Antonio		
Robinson, Arthur D., Dallas	5,757.71	6,582.55
Reclamation Co., Fort Worth	5,114.64	6,641.67
Richardson, C. F., and S. W. Kelsey, Fort Worth	45,351.96	41,814.05
Ruby Oil Co., Minerva	151.21	198.09
Red River Oil Co., Tulsa, Okla.	25,868.74	35,690.84
Ranell Oil Co., Oklahoma City, Okla.	3,454.65	4,637.00
Refugio Oil Corp., Refugio	69,503.05	50,577.60
Rowe, J. G., Wichita Falls	2,297.64	3,271.49
Roeser & Pendleton, Inc., Fort Worth	185,808.06	253,772.31
Rio Bravo Oil Co., Houston	806,787.33	947,400.58
Ramming, W. F., Wichita Falls	84.24	117.51
Reiter-Foster Oil Corp., Tulsa, Okla.	10,887.97	14,734.90
Rountree & White, Rockdale	461.53	604.61
Ruyle Farm & Oil Co., Wichita Falls	6,206.66	8,975.25
Roth & Faurot Oil & Gas Co., Independence, Kans.	3,106.24	4,626.74
Reed, W. M., Breckenridge	1,184.75	1,445.40
Republic Production Co., Houston	669,153.23	651,787.87
Reeder & Scarborough, Wichita Falls	3,805.65	5,339.23
Ryan Consolidated Petroleum Corp., Tulsa, Okla.	70,341.72	93,954.98
Remington, E. H., Newcastle	5,521.87	7,283.91
Ramsel W. T., Oil Co., Rockdale	1,621.02	2,123.54
Ramsey, E. H., Rising Star	596.50	885.60
Ramming, R. W., Wichita Falls	2,124.13	3,013.76
Ramming-Staley-Ramming, Wichita Falls	541.47	733.90
Rancho Oil Co., Fort Worth	9,770.30	12,530.66
Rochmill, Henry, trustee, Fort Worth	736.28	975.57
Rex Petroleum Corp., Vinton, La.	16,650.66	19,148.26
Reeder, R. S., et al, Wichita Falls	1,124.52	1,534.99
Rathke Oil Co., Wichita Falls	24,469.96	33,963.67
Ruthada Oil Co., Oklahoma City, Okla.	5,998.38	5,098.61
Rentex Oil Co., San Antonio	7,108.95	8,252.61
Randado Oil Corp., Oklahoma City, Okla.	19,508.59	16,582.30
Riner & Omohundro, Wichita Falls	9,705.54	13,894.18
Riner & Bailey, Wichita Falls	31,610.71	42,260.26
Root, C. M., Eastland	4,547.00	6,108.00
Root Drilling Co., Eastland	4,396.00	5,919.00
Root & Rhodes, Eastland	3,963.00	5,339.00
Root, Rhodes, Gilman & McMurray, Eastland	5,474.00	8,002.00
Root & Fehl, Eastland	6,073.00	7,880.00
Rensual Petroleum Co., Pampa	3,536.00	4,571.47
Rex-Tex Oil Co., Brownwood	882.09	1,271.44
Rycade Oil Corp., Houston	74,480.79	76,409.25
Rhodes & Highers, Breckenridge	4,251.92	5,924.11
Rhett-Wilder et al, Rockdale	678.65	509.04
Reno Oil Co., Sistersville, W. Va.	44,390.04	62,466.33
Robertson, R. R., Wichita Falls	5,384.06	6,860.56
Ribble, O. C., South Bend	255.23	349.46
Red Bank Oil Co., Tulsa, Okla.	8,785.29	12,150.27
Rubsam & Hunter, Wichita Falls	6,133.20	8,299.45
Riggs, E. R., and J. T. Oliphant, Graham	8,121.22	11,047.83
Riggs, E. R., Graham	49,202.18	71,757.41
Reed, Crenshaw & Glass, Nowata, Okla. (9-30-30)	6,733.51	9,261.71
Ruthada Oil Co., Oklahoma City, Okla.	19,307.31	18,263.90
Rush, Anderson & Moore, Big Spring	4,138.72	4,138.72
Robert Oil Corp., Breckenridge	20,540.46	28,378.82
Robinson, O. D., Pittsburgh, Pa.	1,257.84	1,184.16
Ross, C. E., Burkburnett	575.06	741.10
Rock Creek Oil Corp., Amarillo	3,881.75	3,008.36
Russell & Wilson, Wichita Falls	4,427.47	5,697.35
Reinhart, M. J., trustee, Oklahoma City, Okla.	482.13	669.97
Rockwell, J. A., & Co., Warren, Pa.	2,197.03	2,965.83
S		
Superior Oil Producing Co., Tulsa, Okla. (6-30-30)	1,904.39	2,614.78
Superior Oil Producing Co., Tulsa, Okla. (3-31-30)	1,815.42	2,405.42
Spencer, H. H., & Co., Burkburnett (6-30-30)	150.44	215.13
Strawn & Fisher, Electra (6-30-30)	1,099.18	1,400.10
Seaboard Oil & Gas Co. of Texas, Wichita Falls (3-31-30)	29,141.30	39,802.07
Staley, J. A., Wichita Falls	1,606.91	2,187.09
Stepp & Keister, Coleman (6-30-30)	145.66	281.33
Swearingen Oil Co., San Antonio (6-30-30)	1,780.62	2,168.05
Southern Oil & Producing Co., Eastland (6-30-30)	2,205.96	2,981.62
Southern Oil & Producing Co., Eastland (3-31-30)	829.70	1,082.88
Southern Oil & Producing Co., Eastland (12-31-29)	6,809.10	9,319.73
South Oil Co., The, Rosston, Ark. (6-30-30)	533.03	630.43
Shoup, O. H., Jr., Colorado Springs, Colo. (6-30-30)	1,834.51	2,542.10
Schoolfield, R. E., Oklahoma City, Okla. (6-30-30)	302.11	378.26
Stein, H., Ranger	663.16	786.30
Shattuck, Mrs. Nellie S., Execx., Dallas	3,009.23	3,987.21
Slicker, Homer, Cisco	912.72	1,168.72
Stephens Oil Co., Sour Lake (6-30-30)	539.13	620.00
Stephens Oil Co., Sour Lake (3-31-30)	456.01	478.81
Stephens Oil Co., Sour Lake (12-31-30)	419.29	545.07
S. R. C. Oil Corp., San Antonio (6-30-30)	78,631.20	87,668.50
Schlicher Oil Co., Beaumont	764.68	879.39
Sand Creek Oil Co., Amarillo	3,718.73	3,936.47
Storey-Friebele-Duffey Oil Co., Winston Salem, N. C.	2,374.72	2,041.07
Storey-Friebele-Duffey Oil Co., Winston-Salem, N. C.	17,601.25	14,485.83
Simmons, T. K., Tulsa, Okla.	1,168.16	1,499.76
Strelsky & Hefley, Joe, Rockdale	328.97	442.47
Stratton, Ed F., Pioneer	294.09	357.12
Smith, Levi, et al, Texon	19,364.03	29,827.65
Southern Exploration Co., Houston		
Stroughan & Texannati Oil Co., San Angelo	3,925.00	4,043.87
Somerset Crude Oil & Refining Co., Somerset	2,564.37	2,807.53
Somerset Oil Co., San Antonio	1,025.18	1,096.92
Stephens Oil Co., Sour Lake (9-30-30)	501.70	576.96
Swanner, John L., Wichita Falls	1,506.81	2,076.03
Stump, E. J., Wichita Falls	4,499.47	6,461.24
Sircovich, A. and Mrs. F. M. Thomas, Houston	353.03	324.76
Smith, McIntosh & Thomas, Cameron	542.47	691.65
Shappell Oil Co., Wichita Falls	46,344.37	63,840.21
Spencer, H. H., & Co., Burkburnett (9-30-30)	215.51	306.62
Sessions, I. P., Rockdale	463.08	590.43
Schermerhorn-Winton Co., Minneapolis, Minn.	36,026.52	29,291.00
Scott & Nance, Graham	3,111.21	4,213.16
Scott & Britton, Graham	142.88	186.23
Schulz & Weaver, Wichita Falls	6,999.22	8,691.22
South Shore Oil Co., Houston	5,992.88	6,106.06
South Texas Petroleum Co., Houston	135,059.43	198,537.25
Smith, E. L., Oil Co., Inc., Mexia	125,431.75	146,470.07
Snowden & McSweeney Co., New York, N. Y.	50,943.87	68,932.57
Southern Petroleum Exploration, Inc., Sistersville, W. Va.	33,439.08	40,394.78
Scott, W. M., Wichita Falls	3,254.66	4,547.00
Standard Oil Land & Leasing Co., Electra	119.24	166.33
Smith, W. B., trustee, Eastland	394.14	505.66

(Continued on Next Page)

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By no other standard can the true value of Toncan Iron Pipe be gauged properly. Compared with ordinary pipe—in measurements of 365 days—the longer life of Toncan Iron Pipe is most convincing. It is a trouble-free pipe of highly refined iron, copper and molybdenum, with permanence processed into every tiny grain of metal. Use the 365-day yardstick to determine how much any pipe will cost—and Toncan Iron Pipe certainly will cost less.

For more than 20 years, Toncan Iron has been successfully combating rust and corrosion. Toncan Iron Pipe has demonstrated in service in every industry its ability to keep on working faithfully and economically, years after other ferrous pipe has had to be replaced.

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REPUBLIC STEEL CORPORATION

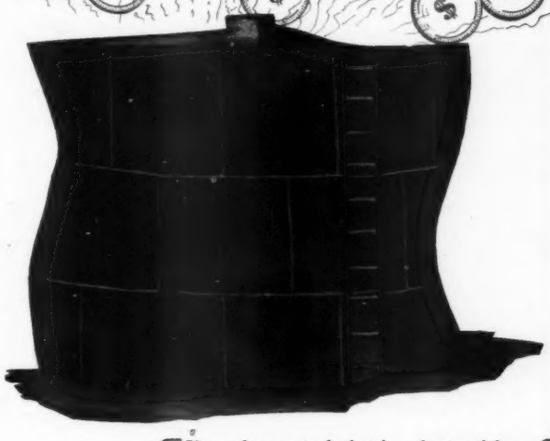
GENERAL OFFICES YOUNGSTOWN, OHIO

BIRMINGHAM DENVER PHILADELPHIA BOSTON DETROIT PITTSBURGH BUFFALO EL PASO CHICAGO INDIANAPOLIS SAN FRANCISCO CINCINNATI MILWAUKEE SEATTLE CLEVELAND LOS ANGELES ST. PAUL DALLAS NEW YORK ST. LOUIS TULSA TOLEDO

TEXAS GROSS PRODUCTION, THIRD QUARTER (Continued)

Name and address—	Barrels	Value
Shasta Oil Co., Wichita Falls	499.43	655.06
Scott & Walker, Albany	2,289.43	2,924.26
Selby Oil & Gas Co., Tulsa, Okla.	6,997.36	10,738.00
Smith, Levi and Fred Hyer, Texon	762.14	1,116.53
Smith, Levi and J. C. Shaffer, Texon	135.26	148.39
Smith, Levi, Texon	511.36	743.17
Smith, McIntosh & Thomas (Coulter lease), Cameron	1,171.89	1,535.18
Stella Oil Co., Beaumont	15,381.74	17,688.99
Salado Oil Co., San Antonio	1,499.54	1,829.41
Smith & Bynum, Amarillo	368.67	392.43
Smith, Mrs. James L., Amarillo	2,515.80	2,720.10
Scarborough, W. A., Burkburnett	1,491.20	1,917.71
Staniforth, M., Wichita Falls	5,037.22	7,203.23
Sedgwick Oil Co., Tulsa, Okla.	9,799.84	12,554.43
Summit Oil & Refining Co., Amarillo	751.52	797.74
Sullivan, M. J., Kansas City, Mo.	356.39	507.25
Summerfield Oil Co., Tulsa, Okla.	167.64	220.24
Saratoga Oil Co., Wichita Falls	693.92	1,027.00
Star Drilling Co., Wichita Falls	18,032.50	25,882.99
Syndicate Oil Corp., Rochester, N. Y.	911.40	1,311.71
Stroube & Stroube, Corsicana	52,497.33	56,356.18
Schaffke, Edward, Electra	88.96	104.43
Schlaffke & Blair, Electra	9,735.34	14,510.60
Shaw Oil Co., Wichita Falls	41,519.63	56,707.19
Skelly Oil Co., Tulsa, Okla.	761,979.94	796,180.30
St. Marys Oil & Gas Co., St. Marys, W. Va.	47,238.69	51,713.35
Skinner, E. W., Oil Co., Saratoga	3,631.94	4,013.45
Southern Oil & Production Co., Fort Worth	1,419.43	1,839.00
Shankle Newton Oil & Gas Co., Laredo (6-30-30)	1,838.00	1,562.35
Shankle Newton Oil & Gas Co., Laredo (9-30-30)	38,570.00	32,884.50
Southern Crude Oil Purchasing Co., Fort Worth	2,166,306.63	1,666,985.55
Swearingen Oil Co., San Antonio (9-30-30)	2,875.48	3,508.04
Sprague Oil Co., Ardmore, Okla.	10,250.80	7,118.41
Senter, E. G., Jr., Dallas	295.12	433.68
Stovall, E. C., & Son., Graham	2,842.37	3,932.91
Simms Oil Co., Dallas	926,287.31	820,475.66
Southern Production Co., Rockdale	678.65	509.04
Schaffner-Wilson et al, Wichita Falls	1,830.74	2,777.99
Slick, Thomas B., Oklahoma City, Okla. (Aug. 16 to Sept. 30-30)	28,863.46	35,085 39
Slick, Thomas B., et al, Oklahoma City, Okla. (Aug. 16 to Sept. 30-30)	7,744.68	11,068.46
Sandefer-Atkinson-Daniel Oil Corp., Breckenridge	3,591.98	4,869.27
Saigh, N. A., San Antonio	981.97	1,197.95
Supreme Oil Co., Orange	1,859.52	2,138.44
Sink, Joel, Corsicana	187.00	254.00
Sequoia Oil Co., Fort Worth (9-30-30)	153,549.77	115,668.34
Sequoia Oil Co., Fort Worth (9-30-30)	3,645.13	2,714.41
Smith, G. M. and C. E. Ash, Wichita Falls	12,454.78	16,385.80
Simpson, O. H., Fort Worth	1,387.84	1,966.08
Schaffner, E. N., et al, Cross Plains	954.98	1,144.08
Shertzer Brothers, Dewey, Okla.	5,720.98	7,218.11
Sinclair Oil & Gas Co., Houston	195,020.73	219,262.96
Shallow Sand Oil Co., Fort Worth	303.72	381.17
S. R. C. Oil Corp., San Antonio (6-30-30)	78,631.20	87,668.50
Schoolfield, R. E., Oklahoma City, Okla.	242.24	311.08
States Oil Corp., Eastland	33,176.14	43,290.42
Simpson-Fell Oil Co., Ardmore, Okla.	9,565.05	9,270.24
Seybert Brothers, Mooringsport, La.	1,972.98	2,870.41
Sheffield Oil Co., Houston	5,624.76	6,468.49
Southwest Royalty Co., Wichita Falls	11,732.87	13,456.70
Spring Creek Oil Co., Amarillo	1,430.63	1,497.26
Schermerhorn Oil Co., Minneapolis, Minn.	109,009.58	79,295.99
Shamrock Oil & Gas Co., Amarillo	172,088.37	193,161.42
S. & W. Oil Co., Amarillo	7,745.95	6,267.07
Savoy Oil Co., Tulsa, Okla.	9,648.86	7,448.04
Staley, J. L., & Co., Wichita Falls	3,434.91	4,474.16
Staley, Wynne & Co., Wichita Falls	189,681.75	237,269.04
Stekoll, Harry, Tulsa, Okla.	30,344.85	32,058.87
Stock, H. L, Cisco	3,173.45	4,250.71
Sunray Oil Co., Tulsa, Okla.	106,889.41	111,485.35
Superior Oil Producing Co., Tulsa, Okla. (9-30-30)	1,619.81	2,179.24
Sheidon, C. P., Electra	9,621.11	13,284.68
Smith Salvage Co., Houston	363.10	417.57
Speed, C. D., Corsicana	276.29	375.75
S. R. C. Oil Corp., San Antonio (9-30-30)	116,871.61	114,174.90
Swenson, E. P., Stamford	.....	.....
Sinclair Oil & Gas Co., Tulsa, Okla.	101,882.36	142,269.19
Shell Petroleum Corp., St. Louis, Mo.	4,019,486.08	4,304,543.40
Saxet Oil Co., Houston	288,540.48	276,426.06
Sun Oil Co., Dallas	1,797,545.98	2,019,621.63
Spencer, H. E., trustee, St. Louis, Mo.	763.58	969.67
Skia-Tex Petroleum Co., Amarillo	26,886.57	29,613.41
Smith, R. E., Houston	13,921.15	14,440.70
Sentinel Petroleum Corp., Chicago, Ill.	188.00	233.57
Southern Drilling & Production Co., Bay City	28,014.17	33,850.82
T		
Tillman, J. W., Humble	939.43	945.91
Transcontinental Oil Co., Tulsa, Okla., per July 1 to Aug. 20, 1930	1,235,064.60	1,006,319.85
Thomas, J. A., Burkburnett	1,977.12	2,550.70
Thoil Oil Co., Beaumont	3,473.54	5,202.45
Texas Consolidated Oil Co., San Francisco, Calif.	8,128.10	11,104.16
Texas-Electra Co., The, Newark, Ohio	270.51	386.82
Thomson, F. L., San Antonio	25,983.46	28,321.97
Towns, M. K., Luling	13,076.55	13,076.55
Tidwell, R. V., Trustee, Graham	3,927.38	4,610.11
Tillman, J. W., Humble (9-30-30)	1,623.25	1,80[illegible]
Thornton, E. G., Olney (Apr. 5 to May 2, 1930)	.....	1,455.16
Texas-Electra Co., The, Newark, Ohio (6-30-30)	271.09	381.68
Trinity Townsite Co., Dallas	1664.41	466.42
Texas Fidelity Oil Corp., Fort Worth	6,255.94	8,771.13
Teaforth, L., et al, Eastland	1,494.80	2,085.25
Thaxton, W. H., Austin	236.32	321.39
Travelers Oil Co., Amarillo	12,113.12	13,242.05
Texas Petroleum Development Co., Cameron	4,221.80	5,562.55
Talbot & Markle, Houston	4,879.48	5,106.38
Teel Production Co., The, Breckenridge	1,368.19	1,823.22
Tex Cal Oil Co., Brownwood	6,351.32	7,300.31
Triangle Oil & Gas Co., Rockdale	834.99	1,083.24
Tannehill, L. B., Albany	41,095.58	55,492.38
Timblin, W. E., Wichita Falls	210.16	300.52
Texas Gas Co., Houston	775.52	659.19
Teddlie, J. E., Liberty	6,650.83	7,648.46
Tower & McKanna, Inc., Wichita Falls	8,949.52	13,760.40
Texon Oil & Land Co. of Texas, Fort Worth	92,990.24	71,247.80
Trinity Production Co., Wichita Falls	373.38	526.14
Treat, E. M., Oil & Gas Co., Pittsburgh, Pa.	1,105.17	1,501.92
Thomasson, E. M., & Co., Inc., Denver, Colo. (9-30-30)	439.74	614.63
Thomasson, E. M., & Co., Inc., Denver, Colo. (6-30-30)	737.68	530.95
Tex Cal Oil Co., Brownwood	6,351.32	7,300.31
Thompson, J. E., Humble	599.00	680.00
Texas Unity Oil Co., Houston	451.61	648.65
Tripplehorn, J. W. & D. R., Fort Worth	2,110.97	2,757.04
Thomas, J. Elmer, Fort Worth	144.03	207.29
Triangle Petroleum Co., Inc., Fort Worth	685.18	955.82
Trimount Petroleum Co., Shreveport, La.	5,645.91	8,503.03
Tucker, Art, Graham	2,075.58	2,895.43
Traylor-Rutherford Oil Corp., Refugio	56,933.86	48,393.77
Theis Oil Co., Sour Lake	3,162.74	3,637.15
Texas Petroleum Co., San Antonio	35,259.50	35,420.04
Tegler, F. E., San Antonio	263.17	315.80
Taylor-Bubley Syndicate, Dallas	2,311.14	3,304.89
Timms, L. W., Oil Corp., Amarillo	4,263.71	5,329.52
Timms-Fogarty Oil Corp., Amarillo	558.90	518.38
Timms-Robinson Oil Corp., Amarillo	1,313.13	1,661.22
Timms-Dietsch Oil Corp., Amarillo	5,002.16	6,423.27
Tillery, L. J., Oil Co., Inc., Beaumont	11,757.63	13,581.31
Texas Company, The, Houston	4,433,591.22	5,336,582.46
Texas Pacific Coal & Oil Co., Thurber	119,991.95	162,270.79
Texas Pacific Coal & Oil Co., Thurber	288,345.66	312,457.53
Turman Oil Co., Tulsa, Okla.	36,002.99	50,878.63
Tidal Oil Co., Tulsa, Okla.	271,259.36	257,034.51
Tucker Oil Co., Wichita Falls	79,992.03	102,482.87
Taylor-Link Oil Co., Houston	74,594.18	62,256.91
U		
Unice & Carpenter, Houston (6-30-30)	2,237.00	2,684.00
Unice & Carpenter, Houston (3-31-30)	2,238.90	2,770.92
United Petroleum Co., The, Brownwood (3-31-30)	159.38	176.47
United Oil Corp., Wichita Falls	7,564.89	10,802.45
Union Oil & Mining Co., Tulsa, Okla.	7,216.27	9,164.66
Unity Oil Co., Beaumont	14,281.00	16,436.00
Underwood Drilling Co., Ward A Lease, Wichita Falls	2,723.83	3,704.39
Underwood Drilling Co., U-C-Ward Lease, Wichita Falls	1,589.81	2,162.13
Underwood Drilling Co., Wichita Falls	1,134.51	1,593.80
Underwood Drilling Co., Wichita Falls	1,785.18	2,388.12
Underwood Drilling Co., Wichita Falls	623.60	826.27
University Lease, Section 24, San Angelo	12,554.85	9,970.72
Unice & Carpenter, Houston (9-30-30)	2,415.00	3,201.58
Upham Gas Co. of Texas, Wichita Falls (9-30-30)	5,993.99	8,249.85
Upham Gas Co. of Texas, Wichita Falls (6-30-30)	4,210.97	6,050.68
Upland Oil Co., Pampa	16,465.16	19,696.85
United Producers Co., Wichita Falls	58,420.26	84,365.97
Union Producing Co., Houston	912,917.39	936,057.46
V		
Van Wormer, F. E., Wichita Falls (6-30-30)	1,173.18	1,674.81
Vacuum Oil Co., Houston	31,165.32	42,085.25
Vitek Oil Co., Amarillo	1,177.08	830.16
Vigil Oil & Gas Co., Wichita Falls	17,664.72	23,071.89
Virginia Oil Association, Inc., Fort Worth	2,844.08	4,010.48
Van Wormer, F. E., Wichita Falls (9-30-30)	1,325.92	1,848.88
Van Cleave Trust, Baltimore, Md.	397.44	630.46
Vincent, A. G., receiver, Waskom	356.56	439.95
Ven-Mex Oil Co. of Texas, Wichita Falls	37,869.86	72,360.41
W		
Woodruff Development Co., Inc., Cleveland, Ohio (6-30-30)	924.00	932.70
Woodley Petroleum Co., Shreveport, La., period Jan., Feb., Mar., Apr. and first half of May	1,468.77	1,786.43
Wilder, Jack H., Rice	572.72	773.17
Whitfield, B. V., Oklahoma City, Okla. (6-30-30)	1,109.78	1,557.80
Wise & Jackson, Graham (Sept., 1929 to Mar. 30, 1930)	1,565.50	2,296.37
Wilson, W. I., Electra (6-30-30)	679.50	982.50
Wilson & Swaim, Woodson (6-30-30)	3,360.00	4,174.33
Wilson & Swaim, Woodson (3-31-30)	2,923.03	3,363.44
Washoma Petroleum Co., Enid, Okla. (3-31-30)	15,011.03	1,546.75
Washoma Petroleum Co., Enid, Okla. (6-30-30)	23,763.41	25,356.26
Webb Oil Co., Humble	4,435.63	5,100.98
Woods & Bennett, Humble	6,346.79	7,406.36
Worth Petroleum Co., Fort Worth	4,320.36	5,616.47
Wilson, W. I., Electra (9-30-30)	845.09	1,220.17
Westbrook, R. A., Production Co., Fort Worth	36,690.38	27,474.30
Wolfe, A. T., Wichita Falls	5,581.26	7,738.63
Wahpoo Oil Co., Rockdale	1,082.97	1,543.73
Weller, J. G., et al, Cross Plains	1,643.84	2,377.38
Warner Oil Co., Pampa (9-30-30)	9,360.80	12,258.75
Warner Oil Co., Pampa (6-30-30)	11,437.37	14,411.09
Waggoner, W. T., estate, Fort Worth	2,049.84	2,716.04
Witcher, Mrs. Annie L., guardian, Wichita Falls	3,278.68	4,699.64
Wilbarger Oil Co., Wichita Falls	1,622.49	1,938.14
Wichita Production Co., Wichita Falls	11,602.44	15,959.68
West Texas Petroleum Corp., San Angelo	7,130.15	4,990.03
Wills Oil Co., Rockdale	1,178.57	1,543.93
Whitehill Oil Corp., Tulsa, Okla.	4,213.73	5,996.16
Wheelock & Collins, Corsicana	8,490.55	11,719.93
West Production Co., Houston	14,521.25	17,622.79
Woodley Petroleum Co., Shreveport, La.	101,108.70	136,819.97
Weaver & Pois, Wichita Falls	2,316.08	3,134.36
Wallace, Dr. Charles and wife, Wichita Falls	18,929.89	70,055.13
Wolf, D. L., Olney	6,531.96	7,918.03
Wilson & Swaim, Woodson (9-30-30)	1,360.45	1,913.76
Wakefield, M. E., et al, Cross Plains	167.44	239.44
Witherspoon Oil Co. and C. L. Witherspoon, San Antonio	31,023.37	31,980.53
Weldon Oil Co., Saratoga	11,499.13	11,066.36
Watts, C. D., Moran	763.36	778.60
Walker, A. C., Albany	2,216.76	2,959.60
Worth Oil Co., Wichita Falls	4,222.29	5,202.98
Westheimer & Daube, Ardmore, Okla.	23,096.18	33,080.84
Williams, John H., Dallas	4,816.61	6,602.62
Why Not Oil Co., Mexia	5,136.43	7,136.98
Wo-Mac Oil Co., Wichita Falls	10,828.50	15,242.60
Whiteside, J. E., Brownwood	297.60	348.39
Woody, W. C., Wichita Falls	5,756.11	8,178.62
White & Duncan, Wichita Falls	5,437.94	7,490.22
Weekley Oil Corp., Fort Worth	37,399.32	31,884.21
Witcher, W. C., et al, Wichita Falls	494.44	707.36
Walker, D. B., estate, Fort Worth	205.05	243.38
Woodson Oil Co., Woodson	772.28	980.79
Wilcox H. F., Oil & Gas Co., Tulsa, Okla.	368,746.33	472,088.20
Warner-Quinlan Co. of Texas, Houston	234,940.92	189,589.14
Webster, E. P., Tulsa, Okla.	4,445.95	5,926.20
Watchorn, Robert, Oklahoma City, Okla.	2,169.24	2,538.01
Walton, Blair & Schlaffke, Electra	3,313.00	4,936.09
White, James H., Wichita Falls	7,915.20	10,967.45
Wilson-Broach Co., The, Beaumont	11,326.88	13,025.92
Webb, J. E., Corsicana	197.93	257.30
Webb, J. R. and J. H. Bryant, Corsicana	220.60	198.54
Woodburn Oil Corp., Dallas	3,221.60	4,408.45
Wise & Porterfield, Graham	4,364.73	5,933.18
Ward Oil Corp., Ardmore, Okla.	121,477.34	93,061.11
Wood, Benton, Lesh & McCall, Nocona	4,177.81	3,755.47
Wentz, L. H., oil division, Ponca City, Okla.	5,883.68	4,918.34
Waggoner Refining Co., Inc., Electra (9-30-30)	227,720.44	295,747.71
Waggoner Refining Co., Inc., Electra (3-31-30)	296,826.02	377,641.16
Wilkins, L. A., Burkburnett	3,652.61	4,725.44
Wise & Jackson, Sapulpa, Okla.	5,703.06	7,553.29
Whaley Co., Inc., Fort Worth	2,384.77	3,179.35
World Oil Co., et al, Fort Worth	8,186.09	6,921.14
Wilson, Lee, estate, et al, Wichita Falls	3,999.06	5,507.29
Wills, O. C., Burkburnett	1,078.35	1,412.63
Waggoner, E. P., and C. F. Kolp, Electra	5,066.56	6,710.81
Whitefield, B. V., Oklahoma City, Okla.	570.63	703.45
Weller, H. J., Wichita Falls	269.44	284.84
Wilson Drilling Co., Wichita Falls	15,476.25	21,960.80
West, J. H., Lemon Grove, Calif.	9,750.99	13,312.86
West, C. K., Breckenridge	3,824.61	5,075.18
Woods, C. D., and C. C., Ranger	515.30	790.70
Woodruff Development Co., Inc., Cleveland, Ohio (9-30-30)	582.00	590.46
Wallace & Emrick, Minerva	236.42	309.40
Wallace & Davis, Minerva	302.40	393.40
Wallace & Davis, Minerva	224.34	285.11
Y		
Young Brothers & Alexander, Inc., Fort Worth	6,694.10	8,185.35
York Petroleum Co., Stamford	55.72	71.87
Yount-Lee Oil Co., Beaumont	1,670,137.08	1,806,753.27
Z		
Zadie Belle Oil Co., Fort Worth	454.30	635.75

Save the Vapors
and Save the Dollars



If you would take a piece of zinc, and heat it to a certain degree of temperature, it would soon disappear in gaseous vapor. Likewise a saucer of gasoline. The zinc and also the gasoline, through heating, would be vaporized and lost forever.

Similarly the lighter fractions of the crude are constantly vaporizing unless held under pressure. If they are permitted to escape into the atmosphere, they reduce the volume of the crude, and at the same time lower the gravity, automatically lowering the price.

¶ If you have a tank that is only gas tight, or if your tank has a faulty thief hole or relief valve, though indistinguishable to the eye, it may be constantly losing those lighter fractions, and hence those vapors, if saved, would be very valuable, indeed. So save the vapors, and thereby save the dollars.

¶ It has been carefully estimated that the evaporation from a 250-barrel tank amounts to 5 barrels of crude per day. Figuring at even the present price of crude, that is certainly worth saving, but may not be saved with a faulty tank.

B.S.&B. Perfection *Vapor Pressure* **TANKS**

A B.S.&B. PERFECTION Vapor Pressure Tank *IS* a good investment. These tanks are not only gas-tight. In fact, they are more than that! They are vapor-pressure tight!! They retain the light fractions under pressure, preventing loss of the valuable vapors, thus storing all your crude and maintaining it at well-head gravity.

Each Tank is equipped with the B.S.&B. Thief Hole Pressure Vacuum Valve, which operates at sixteen ounces pressure, the maximum pressure developed by sun rays on ordinary quiet crude, or two ounces vacuum, the maximum vacuum ordinarily developed.

View of the B.S.&B. Thief Hole Pressure Vacuum Valve open. This valve is rugged in construction, built to be manhandled, and to withstand abuses put to it under ordinary field use. It works automatically and is foolproof.

We also manufacture A.P.I. tanks; B.S.&B. A.P.I. Bolted Steel Tanks conform to A.P.I. dimensional standards and to the exacting standards to B.S.&B. manufacture, and carry the official A.P.I. monogram.

"Service on the Dot— Service on the Spot"

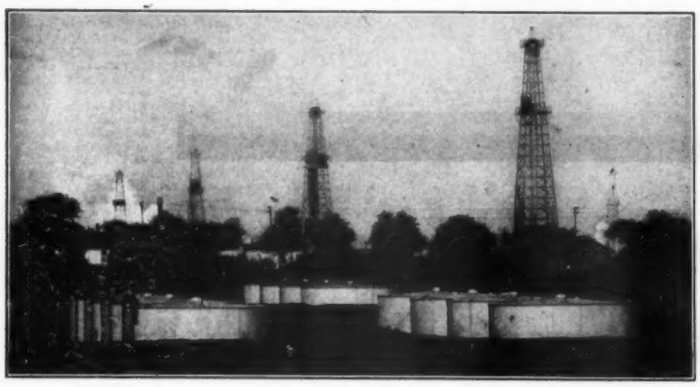
B.S.&B. PERFECTION Vapor Pressure Tanks are serving some of the largest Companies, as well as independent operators, and are saving money for them by saving the light fractions of the crude. May we start saving the vapors for you, too? Call—phone—wire or write. Address Dept. B-41.

EFFICIENT B S & B SERVICE DEPENDABLE

Black Sivalls & Bryson INC.

BARTLESVILLE ~ OKLAHOMA

Twelve 500-Bbl. Low Type Maloneys erected in the Oklahoma City Field by Maloney Sales Corp., distributers.



You can be SURE your oil is kept SAFE by using our Vapor-Pressure Stock and Flow Tanks

- Efficient valves set at 16 oz. pressure and 2 oz. vacuum restrict breathing.
- 12 gauge (or heavier if desired) Keystone Copper Steel throughout insures durability.
- Heavy 2x2 angle ties and reinforcements, with wide gussets on ties and ladders and half-inch heat-treated bolts, give ample strength.
- High-grade aluminum paint reduces temperature variations.

Increase your income from oil production by using our *Vapor-Pressure* Tanks and eliminating unnecessary waste.

"Alone in Quality"

MALONEY TANK MFG. CO.
Tulsa, Oklahoma, U.S.A.
Distributers at All Principal Petroleum Points

Maloney A.P.I. Bolted Steel Tanks conform to A.P.I. dimensional standards and carry the official A.P.I. monogram.

MADE OF KEYSTONE AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY "ALONE"

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 48)

(Rotary operations unless otherwise designated.)

DE SOTO PARISH—HOLLY

Standard Oil Co.'s No. 1-B Dowling Bros., 200 ft. N, 396 ft. W, SE cor. SW SW, Sec. 32-14-13 ..... 13-ft. broken sand 2,813-26 ft; cmtd. 6⅝-in. 2,813 ft.

LA SALLE PARISH—URANIA

Montugu Oil Co.'s No. 9 Zenoria Lbr. Co., 660 ft. W, 200 ft. S, NE cor., Sec. 10-9-1e ..... Began drlg. Oct. 15; cmtd. 10-in. 103 ft; 6-in. 1,491 ft; W.O.S.R. 1,508 ft.

Montugu Oil Co.'s No. 10 Zenoria Lbr. Co., 160 ft. S, 160 ft. E, NW cor., Sec. 11-9-1e ..... Derrick.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4 ..... Location.

Texas-La. Prod. Co.'s (was Moody-Seagraves Gas Co.'s), No. 1 Fisher, 660 ft. E, 3,814 ft. N, SW cor., Sec. 24-21-5 ..... D.S. test 2,393 ft; dry; 2,350-2,421 ft. dry; 2,421-64 ft. S.W; S.D; repairing rig 2,550 ft.

OUACHITA PARISH

Bahan & Bahan's No. 1 Fabolio, 660 ft. S, 660 ft. W, NE cor., Sec. 35-19-3 ..... Location.

La. G. & F. Co.'s No. 4 fee (was Industrial Gas Co.'s), 1,334 ft. N, 652 ft. W, SE cor., Sec. 2-19-3 ..... Drlg. 1,307 ft.

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4 ..... Location (reported drlg. in error)

Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4 ..... Cmtd. 6-in. 2,135 ft.

Palmer Corp.'s No. 4 Cole, 1,980 ft. N, 660 ft. W, SE cor. SE, Sec. 26-20-4 ..... O.W.D.D; completed May 19, 1930, 5,000,000 ft. gas, 635 rock; T.D. 2,176 ft; reaming sandy shale 2,308 ft.

Pipe & Mack's No. 2 Union Gas Products Co., 296 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5 ..... Location.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 ..... Location.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig moved; derrick.

Franklin O. & G. Co.'s No. 1 Thompson, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6 ..... Location.

Palmer Corp.'s No. 1 Holdiness, 552 ft. S, 2,215 ft. W, NE cor., Sec. 8-16-6 ..... Drlg. 1,837 ft.

Southern Carbon Co.'s No. 1 J. A. Clements, 1,320 ft. S, 1,980 ft. W, NE cor., Sec. 10-16-6 ..... Bailing to test 2,440 ft.

Southern Carbon Co.'s No. 1-B Hale, 1,320 ft. N, 660 ft. E, SW cor., Sec. 15-16-6 ..... Location.

Southern Carbon Co.'s No. 1-C Hemler, 1,164 ft. S, 888 ft. W, NE cor., Sec. 14-16-6 ..... Cmtd. 6-in. 2,285 ft.

Southern Carbon Co.'s No. 1-D M. and M. McCoy, 1,980 ft. S, 660 ft. W, NE cor., Sec. 30-16-6 ..... Location.

Southern Carbon Co.'s No. 7 F. B. and E. A. Sartor, 2,540 ft. S, 660 ft. E, NW cor., Sec. 17-16-7 ..... Location.

Southern Carbon Co.'s No. 1-E Thomason, 2,300 ft. S, 100 ft. E, NW cor., Sec. 32-16-6 ..... Began drlg. Nov. 22; drlg. 220 ft.

State Line O. & G. Co.'s No. 1-A Boughton, 1,883 ft. E, 127 ft. S, NW cor. SW, Sec. 33-16-6 ..... S.W. 2,475 ft; arranging to plug back to 2,450 ft.

State Line O. & G. Co.'s No. 1 Hewitt, 1,721 ft. S, 957 ft. E, NW cor. SW, Sec. 32-16-6 ..... Began drlg. Nov. 12; cmtd. 12-in. 158 ft; 9-in. 882 ft.

State Line O. & G. Co.'s No. 1 Noble-Morris, 917 ft. N, 389 ft. W, SE cor. SE SW, Sec. 35-16-5 ..... Location.

United Carbon Co.'s No. 1 J. A. Hemler, 660 ft. W, 660 ft. N, SE cor., Sec. 5-16-6 ..... Cmtd. 6-in. 2,285 ft.

United Carbon Co.'s No. 1 Lindow, 1,980 ft. S, 37 ft. E, NW cor., Sec. 15-16-6 ..... Location.

United Carbon Co.'s No. 2 C. M. Noble, 805 ft. W, 1,498 ft. N, common cor. Secs. 7, 8 and 38-15-16 in Sec. 37.. Drlg. 2,405 ft.

SABINE PARISH—PLEASANT HILL

F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, SW cor., Sec. 27-10-12 ..... Cmtd. 6-in. 2,945 ft.

SABINE PARISH—ZWOLLE

W. M. Coates' No. 1 Sabine Lbr. Co., 424 ft. N, 424 ft. E, SW cor. NW NW, Sec. 1-7-12 ..... Coring 2,195 ft.

Tom Davis' No. 1 Holliday (was T. D. Allison's), Sec. 31-8-12, Zwolle Townsite ..... S.D. wtr. 1,350 ft.

F. M. Hood's No. 1-B Winston (was No. 2), 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle Townsite .... S.D. 1,065 ft.

Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12 ..... Rig up.

Pelican Nat. Gas Co.'s No. 6 La. Long Leaf Lbr. Co., 200 ft. N, 200 ft. W, SE cor. NW SW, Sec. 4-7-11.. Cmtd. 6-in. 2,291 ft.

H. W. Perritt, trustee's No. 1 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. SW, Sec. 2-7-12 ..... Cmtd. 6-in. 2,182 ft.

C. H. Teat et al's No. 1 Craig, 300 ft. N, 300 ft. E, SW cor. NE NE, Sec. 25-8-12 ..... Drlg. chalk 2,560 ft.

Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 ..... S.D. 2,495 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 9 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 18-7-13 ..... Show oil and gas 2,234 ft; tested dry; D.S. test 2,520 ft; dry; W.O.

UNION PARISH

Bahan & Bahan's No. 1 Barr, 283 ft. S, 833 ft. E, NW cor., Sec. 16-20-4 ..... Cmtd. 8-in. 795 ft; drlg. 1,800 ft.

La. G. & F. Co.'s No. 1 J. W. Hollis, 662 ft. E, 412 ft. N, SW cor. SE, Sec. 10-21-3 ..... Location.

La. G. & F. Co.'s No. 12 Smith (was Ouachita Nat. Gas Co.'s), 2,152 ft. N, 708 ft. E, SW cor., Sec. 20-20-4.... Location.

ARKANSAS

JOHNSON COUNTY

(Cable tools)

Ark.-La. P. L. Co.'s No. 1 Hudson et al, 660 ft. N, 545 ft. E, SW cor. SE NE, Sec. 14-10-24 ..... Drlg. 1,562 ft.

Ark.-La. P. L. Co.'s No. 1 Mattie Kelly, 330 ft. S, 657 ft. E, NW cor. SW SW, Sec. 14-10-24 ..... Drlg. 2,910 ft.

River Valley Gas Dev. Co.'s No. 1 W. F. Collier, 350 ft. S, 330 ft. E, NW cor. SE SE, Sec. 21-9-25 ..... Drlg. 250 ft.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E. 400 ft. N, SW cor. SE SE, Sec. 23-15-16 ..... 5-ft. sand 2,020 ft; cmtd. 6-in. 2,015 ft.

SEBASTIAN COUNTY

Ozark Nat. Gas Co.'s No. 1 Wright, C NW NE, Sec. 29-8-30 ..... Drlg. 450 ft.

UNION COUNTY—CHAMPAGNOLLE

Lion Oil Ref. Co.'s No. 1 Sullivan, 330 ft. N, 330 ft. W, SE cor. SE NW, Sec. 12-17-14 ..... 6-ft. sand 2,987 ft; cmtd. 6⅝-in. 2,980 ft.

Lion Oil Ref. Co.'s No. 2 Sullivan, 933 ft. S, 200 ft. W, NE cor. NE NW, Sec. 12-17-14 ..... Cmtd. 6⅝-in. 2,980 ft; T.D. 2,991 ft.

Ohio Oil Co.'s No. 10 Crain, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 1-17-14 ..... Cmtd. 6⅝-in. 2,978 ft; T.D. 2,990 ft.

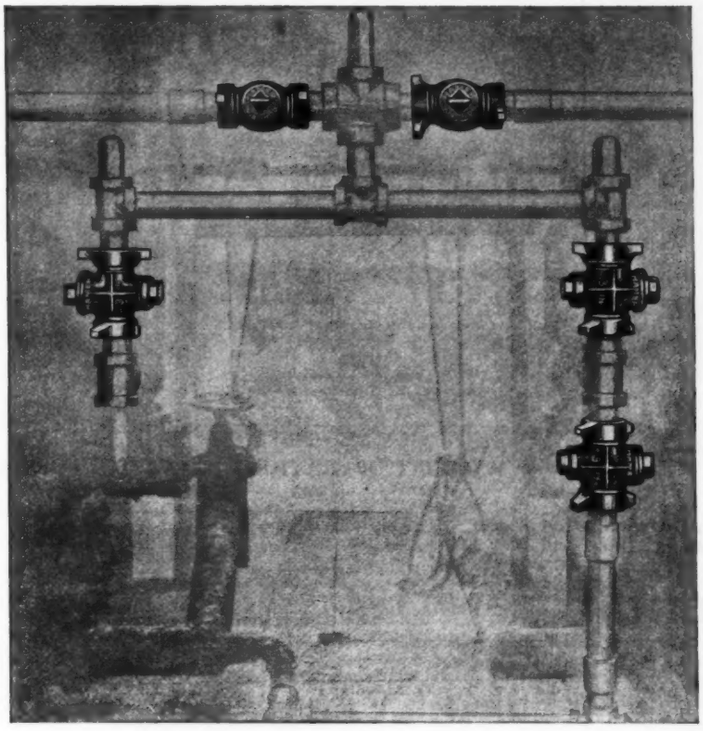
Ohio Oil Co.'s No. 11 Crain, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 1-17-14 ..... Derrick.

UNION COUNTY—EL DORADO

Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... S.D; repairing rig; T.D. 1,520 ft.

Weisinger & Boll's No. 3 Goodwin, 175 ft. N, 150 ft. E, SW cor. NE NW, Sec. 6-18-15 ..... W.O.S.R. 2,175 ft.

Hamer's Latest Stop Cock



Hamer "Noblindo" Pressure Seal Stop Cocks

Made of Grade A Chrome Nickel Steel

All Hamer Stop Cocks are built of the finest chrome nickel steel obtainable, thus assuring positive, dependable and safe operation at all times with an indefinite long life.

The Hamer Stop Cock is noted for its ease of operation which is the result of balanced pressure exertion construction and complete grease lubrication.

Hamer Stop Cocks are superior for high pressure hydraulic work.

In Hamer Stop Cocks the opening through the stop is considerably larger than that of the pipe line used in connection with the particular size of valve and has round corners thus preventing cut-outs. Core head and nuts on all sizes from 2 inches up to and including 4 inches have 2½ inch hexagon heads and nuts.

Write for Catalogue!

Hamer Oil Tool Co., Ltd.
2911 Cherry Ave., Long Beach, California

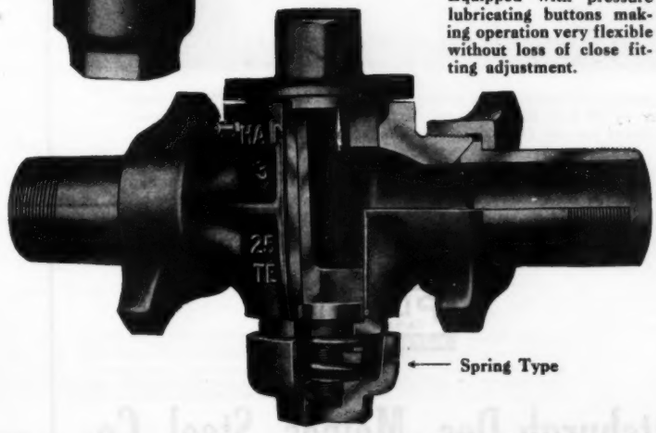
Mid-Continent Distributors
Iverson Tool Company, Tulsa, Oklahoma
The Thrift Corp., Houston, Texas

Standard Type (Regular Threads)

Made in all sizes to meet every requirement. Reinforcement ribs built in the body of the shell give sufficient strength with a minimum of weight, thereby assuring safe operation at high pressure.

Sub and Wing Nut Type

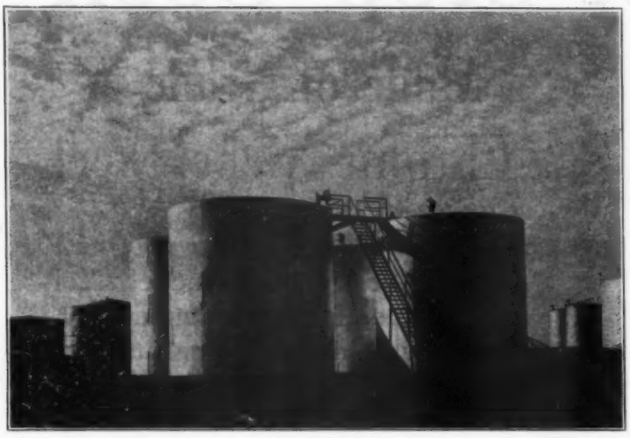
Equipped with pressure lubricating buttons making operation very flexible without loss of close fitting adjustment.



← Spring Type

HAMER PRESSURE SEAL STOP COCKS

PITTSBURGH DES MOINES



Four 2625-barrel PDM storage tanks each measuring 25 feet by 30 feet with welded cone roofs erected at Cushing for the Deep Rock Refining Company. In the background are 5,000 and 10,000-barrel tanks also included in this job.

Steel Storage Tanks and Oil Refinery Equipment

A total of forty-two PDM storage tanks of various capacities up to 10,000 barrels were recently erected by our field erection crews at Cushing, Oklahoma, for the Deep Rock Refining Company, after fabrication in our Des Moines plant. These two views show some of the completed tanks.

An eastern fabricating plant at Pittsburgh and a third of a century's experience in supplying equipment to oil fields and refineries further augment Pittsburgh-Des Moines service.

Sixteen 1120-barrel PDM storage tanks each measuring 20 feet diameter by 20 feet high with welded cone roof construction just completed for the Deep Rock Refining Company at Cushing, Okla.

Standard sizes and types of PDM storage tanks can often be supplied direct from the eastern or western stocks of our two plants. Send us your detailed specifications, and we will submit quotation and quickest shipment available from either plant.

PDM TANKS PITTSBURGH

Pittsburgh-Des Moines Steel Co.

3413 Neville Island, Pittsburgh — 1225 Praetorian Bldg., Dallas — 915 Tuttle St., Des Moines

New York San Francisco Seattle Chicago Atlanta

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. ..... Location.

Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. ..... S.D. brown chalk 3,520 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor. Jno. Womack Sur., in B. C. Jordan Sur. ..... Cmtd. 7-in. 4,480 ft.

W. G. Banks et al's No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. ..... Rig up.

S. E. Bell et al's No. 1 Burnett Lbr. Co., C, S. B. Hendricks Sur. ..... Drlg. lime 2,740 ft.

Creighton & Hart's No. 1 Greeny-Kyle, C, Greeny-Kyle 60 ac., Jas. Tippett Sur. ..... Drlg. hard lime 3,380 ft.

Texas-La. Prod. Co.'s No. 1 Baker, 1,000 ft. N, 550 ft. W, SE cor., 63-ac. Baker tr., in B. C. Jordan Sur. .. Drlg. hard lime 3,085 ft.

Knox et al's No. 1 Dunham (was Jackson et al's), 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur. ..... Small show oil; cmtd. 6⅝-in. 2,670 ft; tested dry 2,732 ft; cored hard lime 2,751-59 ft.

Nat. Gas Prod. Co.'s No. 1 H. H. Alvord, 6,777 ft. S, 6,162 ft. E, NW cor., B. C. Jordan Sur. ..... Drlg. 1,800 ft.

Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor., Jno. Womack Sur. in B. C. Jordan Sur. ..... Derrick.

UNION COUNTY—SMACKOVER

J. E. Crosbie et al's No. 1 G. L. Murphy, 300 ft. N, 300 ft. W, SE cor. SW NW, Sec. 13-16-16 ..... O.W.D.D; completed Nov. 8, 1930; pumping 100 bbls., 50% S.W, 2,740 ft; coring 2,835 ft.

MISSISSIPPI

RANKIN COUNTY

Feazel O. & G. Co.'s No. 1 Cox, SE cor. SE SE, Sec. 12-5-1e ..... Derrick.

Gulf Ref. Co.'s No. 1 Hamilton, 1,320 ft. N, 1,320 ft. E, SW cor., Sec. 12-5-1e ..... Small show oil 2,620 ft. and 2,660 ft; cored chalk 2,857 ft; drlg. chalk 2,978 ft.

Southern Pet. Co.'s No. 1 Ivey, SE, Sec. 12-5-1e ..... Began drlg. Nov. 25.

Wallace Oil Co.'s No. 1 Cobb, SW cor. SE NE, Sec. 12-5-1e ..... Cmtd. 6⅝-in. 2,375 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 48)

C. D. Neff et al's No. 1 H. P. Dowling, 240 ft. N, 240 ft. W, SE cor., Sec. 18-13-14 ..... Drlg. 150 ft.

C. D. Neff et al's No. 1 Ramsey, 1,000 ft. W, 400 ft. S, NE cor. SE, Sec. 33-13-16 ..... Derrick.

LA SALLE PARISH

La. G. & F. Co.'s No. 2-B Tensas, 1,980 ft. W, 1,321 ft. S, NE cor., Sec. 23-7-4 ..... Location.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ..... S.D. 3,718 ft.

J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10 .. Reaming hard chalk 1,600 ft.

Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10 .... Fishing 600 ft; D.S; T.D. 1,150 ft.

Gulf Ref. Co.'s No. 1 Bodcaw, 1,910 ft. S, 605 ft. W, NE cor., Sec. 13-13-8 ..... Began drlg. Nov. 22; cmtd. 15½-in. 98 ft; drlg. 530 ft.

RED RIVER PARISH

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 33-12-10 ..... S.D; contract depth 3,000 ft.

T. G. Shaw's No. 1 Wilkerson, 460 ft. N, 200 ft. W, SE SE, Sec. 4-12-10 ..... Hole clean; arranging to bail; 1,700 ft. oil in hole; arranging to deepen; T.D. 2,839 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick.

W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-17 ..... Derrick.

Island Gas Co.'s No. 1 Noe, 1,902 ft. N, 660 ft. W, SE cor., Sec. 3-16-5 ..... Top Monroe gas rock 2,365 ft; bailed dry 2,419 ft. and 2,460 ft; D.S. test 2,479 ft., 2,509 ft. and 2,539 ft; S.W; 2,560-96 ft. S.W; S.D. 2,630 ft.

Palmer Corp.'s No. 2 Seubert, 660 ft. N, 660 ft. W, SE cor. SE NW, Sec. 35-17-5 ..... Location.

Pelican Nat. Gas Co.'s No. 1 Faust Bros., 1,980 ft. E, 660 ft. N, SW cor. NW, Sec. 13-17-5 ..... Cmtd. 6-in. 2,277 ft.

SABINE PARISH

Boone trustee's No. 1 Turner, 40 ft. N, 140 ft. W, SE cor. NW NW, Sec. 4-7-11 ..... Rig up.

J. W. Clark's No. 1 Lites, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11 ..... Began drlg. Nov. 20; cmtd. 10-in. 105 ft.

Tom David's No. 1 Smith, 460 ft. N, 200 ft. W, SE cor. SE SE, Sec. 27-8-10 ..... Drlg. 2,150 ft. (C.D.).

Eylers O. & G. Co.'s No. 1 Frazier, 330 ft. S, 330 ft. W, NE cor. NW SW, Sec. 10-8-11 ..... Coring 2,160 ft.

Franks et al's No. 1 Dew, 200 ft. N, 300 ft. E, SW cor. SE, Sec. 22-8-11 ..... S.D. wtr. 1,325 ft.

R. L. Gay, tr.'s No. 1-A Sabine Lbr. Co., 212 ft. S, 170 ft. E, NW cor. SE NW, Sec. 1-7-12 ..... Began drlg. Nov. 23; cmtd. 10-in. 62 ft; drlg. 400 ft.

Lacy Jessup Oil Co.'s No. 1 Brown Lbr. Co. (was Lacey et al's), C NW NE, Sec. 28-8-10 ..... Drlg. 2,115 ft.

Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11 ..... Cmtd. 6⅝-in. 2,270 ft; T.D. 2,360 ft.

Lacey Prod. Co.'s No. 2 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 32-8-12 ..... Began drlg. Nov. 20; junked at 900 ft; R.U. second hole.

Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ..... Top marl 2,395 ft; cmtd. 6-in. 2,385 ft; T.D. 2,407 ft; tested dry 2,412 ft; 100 ft. oil in hole from 2,422 ft; D.S. test dry; show oil and gas 2,800 ft; tested dry.

D. M. Lide's No. 1 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor., Sec. 12-7-12 ..... Rig up.

Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11 ..... Rig up.

Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 21-8-12 ..... Rig up.

McDaniel & Lieber's No. 2 Batson, 480 ft. S, 220 ft. E, NW cor. SW SE, Sec. 16-8-12 ..... Bailing to test 2,553 ft.

Frank Melat, Inc.'s No. 1 Sabine Lbr. Co., 330 ft. N, 330 ft. E, SW cor. SW SW, Sec. 6-7-11 ..... Location.

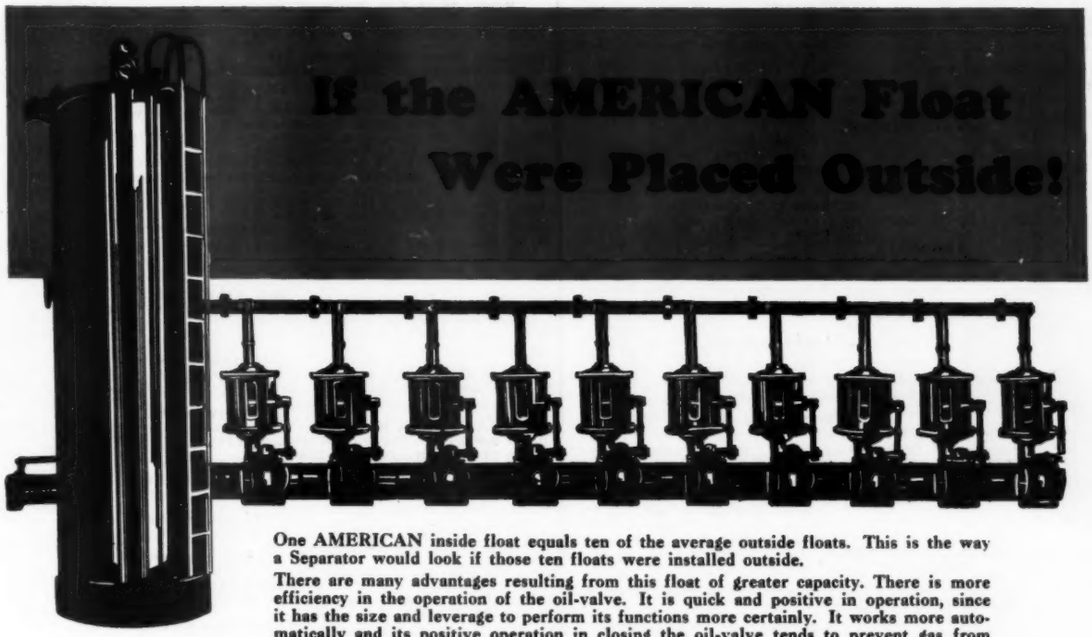
Frank Melat, Inc.'s No. 2 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 14-7-12 ..... Rig up.

Merritt et al's No. 1 La. Long Leaf Lbr. Co., 8½ NE NE, Sec. 33-8-11 ..... Waiting on csg; T.D. 2,245 ft.

Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12 ..... Small show oil 2,580 ft.

Pelican Nat. Gas Co.'s No. 7 La. Long Leaf Lbr. Co., 300 ft. S, 300 ft. W, NE cor. NW SW, Sec. 10-7-11 .... Location.

Pelican Nat. Gas Co.'s No. 6 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NE NE, Sec. 11-7-12 ..... Top marl 2,311 ft; cmtd. 6-in. 2,309 ft.



One AMERICAN inside float equals ten of the average outside floats. This is the way a Separator would look if those ten floats were installed outside.

There are many advantages resulting from this float of greater capacity. There is more efficiency in the operation of the oil-valve. It is quick and positive in operation, since it has the size and leverage to perform its functions more certainly. It works more automatically and its positive operation in closing the oil-valve tends to prevent gas from leaking through the oil valve and entering the stock tanks.

This float has been thoroughly tested hydrostatically to twice the working pressure of the Separator in which it is installed. It has been tested externally to three times the working pressure, which is an assurance that it will not collapse in operation.

The Improved *American* Oil and Gas Separator

Equipped With B.S.&B. Spray Condenser

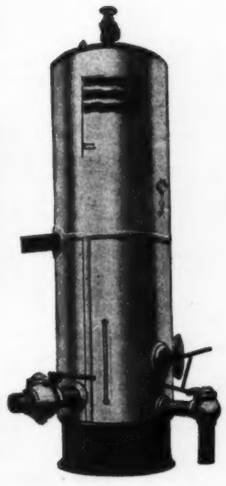
"See American First"

This man-sized float, however, is only one of the many features, some of which are exclusive in the Improved AMERICAN. This Separator assures BONE-DRY GAS, greater capacity, more convenience, and ultimate lower cost.

The Inside Tangential Inlet takes full advantage, without retardment of the principle of centrifugal force; the Disc Foam Baffle prevents oil already separated, from again being carried into the gas stream. The B.S.&B. Spray Condenser completely strips every particle of oil from the gas.

Have you seen the AMERICAN in action? Indeed, "See AMERICAN First" and get complete separation of your oil and gas.

A separate steam jacketed float chamber is not required on the Improved American Oil and Gas Separator, because it is equipped with the inside float. All Separators are equipped with steam coil connections for inside steam coils.



A letter or telegram addressed to Dept. BA-13 will bring information about the Improved American Separators. We'll gladly arrange for a demonstration or refer you to an AMERICAN in action in your vicinity.

American Tank & Equipment Corp.

A SUBSIDIARY OF
BLACK-SIVALLS & BRYSON, Inc., Bartlesville, Okla.
OKLAHOMA CITY — OKLAHOMA

(Formerly American Tank Company)

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D. H. Riddick's No. 1 Scretchfield, 400 ft. E. 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... Made 20-ft. hole 3,280-3,310 ft; S.D.

C. W. Robinson's No. 1 Tramwell, 300 ft. W, 200 ft. N, SE cor. NE NE, Sec. 5-7-11 ..... Rig up.

A. H. Tarver, trustee's No. 1 Baker, 330 ft. S, 330 ft. E, NW cor. NE, Sec. 26-8-12 ..... Began drlg. Nov. 20; cmtd. 12½-in. 125 ft.

A. H. Tarver, trustee's No. 2 Baker, Sec. 26-8-12 ..... Location.

Toteco Oil Co.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S, 100 ft. W, NE cor. NW, Sec. 18-6-12 ..... Drlg. lime 4,217 ft.

The Texas Co.'s No. 1 Stoker, 330 ft. E, 300 ft. S, C, Sec. 10-7-11 ..... Derrick.

Triangle Pet. Co.'s No. 1 Sabine Lbr. Co. (was R. B. Whittle's), 330 ft. N, 330 ft. E, SW cor. SE SW, Sec. 36-8-12 ..... Began drlg. Nov. 22; cmtd. 10-in. 150 ft.

Wilson & Son's No. 1 Gandy-Gharrett, NW SW, Sec. 4-5-12 (portable rig) ..... U.R. 1,815 ft.

John Woodley's No. 1 Sabine Lbr. Co., 400 ft. S, 330 ft. W, NE cor. SE, Sec. 12-8-12 ..... Location.

TENSAS PARISH

Seip et al's No. 1 Fowler, C SW NE, Sec. 10-10-10 ..... S.D. 905 ft.

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... Reamed to bottom; S.D. 2,780 ft

WEBSTER PARISH

Coyle, trustee's No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.

Girard Oil Co.'s No. 1 R. H. Miller, 330 ft. S, 990 ft. W, C, Sec. 16-18-10 ..... Began drlg. Nov. 25; drlg. 100 ft.

ARKANSAS

CHICOT COUNTY

H. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 31-18-3 ..... Hole clean; S.D. fuel; T.D. 2,925 ft.

CLAY COUNTY

S. C. Jeffries, trustee's No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-3 ..... Tested estimated 1,000,000 ft. gas 280 ft; cmtd. 10-in. 305 ft; S.D 330 ft.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Waiting for csg; T.D. 3,740 ft.

COLUMBIA COUNTY

J. W. Olvey et al's No. 1 Kate George, 200 ft. N, 245 ft. E, SW cor. NW SW, Sec. 29-18-20 ..... Drlg. 3,319 ft.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Hamm, 660 ft. N, 660 ft. E, C, Sec. 32-10-6 ..... O.W.D.D; completed Oct. 8; estimated 6,500,000 ft. gas; 775 lbs rock, 3,750 ft; plugged back to 3,050 ft; old T.D. 3,750 ft.

GARLAND COUNTY
(Cable tools)

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-8-19 ..... Cmtng. 5 3/16-in. 3,756 ft.

HOT SPRINGS COUNTY

Anisman et al's No. 1 Hinson est., NE NE, Sec. 19-4-16 (portable rig) ..... Drlg. 1,375 ft.

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16... Cmtd. 12½-in. 42 ft; S.D. 110 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hottle, NW cor. NE, Sec. 1-20-6 .. Began drlg. Nov. 8; S.D. 21 ft.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGhee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7 ..... Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32..... S.D. 2,502 ft.

LOGAN COUNTY

Ark.-La. P. L. Co.'s No. 1 Jno. Jansen, 350 ft. S, 455 ft. E, NW cor. NE NE, Sec. 35-8-24 ..... Cmtd. 13⅜-in. 343 ft; drlg. 425 ft.

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... U.R. 5 3/16-in. 3,570 ft; T.D. 3,510 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 2 Hallin, C. Sec. 17-16-25..... T.A. 405 ft.

J. W. Baxter's No. 3 Hallin, NE SW, Sec. 1-17-26..... Drlg. 50 ft.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26 ... Fishing slip; T.D. 2,370 ft.

East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26 ..... 2-ft. sand 888 ft. dry; S.D; W.O. 900 ft.

E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 26-15-26 ..... Sidetracking short string 4½-in; T.D. 2,961 ft.

Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 23-15-26 ..... Began drlg. Oct. 13; cmtd. 10-in. 93 ft.

Lenz et al's No. 2 Johnson, SE cor., Sec. 24-15-16 ..... Cored sand showing oil; T.D. 3,600 ft.

Lenz et al's No. 3 Johnson, 250 ft. W, 150 ft. N, SE cor. NE NW, Sec. 24-15-26 ..... Drlg. 2,750 ft.

Salzer & McRae's No. 1 Rose, SW cor. NE NW, Sec. 9-16-26 ..... S.D. fuel 475 ft.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17.. Fishing drill bit and collar; T.D. 2,907 ft.

Copenhaven et al's No. 1 Elliott, Sec. 11-15-17..... Fishing 1,760 ft.

Graves Bros.' No. 1 Walker, 350 ft. N, 280 ft. E, SW cor., Sec. 9-14-18 ..... Hole clean; arranging to deepen 1,873 ft.

A. B. Turner, trustee's No. 1 Dave Brown, 220 ft. N, 320 ft. E, SW cor., Sec. 23-15-18..... Cmtd. 6⅝-in. 2,164 ft; T.D. 2,178 ft; 14-ft. sand.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... Drlg. 1,850 ft.

E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24..... Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21..... Drlg. 2,440 ft.

SCOTT COUNTY

Ark. Valley Gas Co.'s No. 1 Turner, C SE, Sec. 27-5-30.. Location.

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26..... Sidetracking tools 1,436 ft; T.D. 1,540 ft.

SEBASTIAN COUNTY

Lavaca O. & G. Co.'s No. 1 Davis, C NW NE, Sec. 29-8-30. Drlg. 2,830 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... S.D. 2,750 ft.

H. L. Hunt's No. 5 Swilly, 330 ft. S, 330 ft. W, NE cor., Sec. 28-16-16 ..... W.O.S.R; 2,000 ft. fluid; T.D. 2,689 ft.

H. L. Hunt's No. 6 Swilly, 330 ft. N, 330 ft. W, SE cor., Sec. 21-16-16 ..... Drlg. lime 2,542 ft.

Marine Oil Co.'s No. 5-A Thompson, 330 ft. S, 330 ft. W, NE cor. SW NE, Sec. 10-18-13 ..... Drlg. 3,380 ft.

Marine Oil Co.'s No. 1-F Winn, Sec. 10-18-13..... Hole full fluid 50% S.W; waiting on air; T.D. 3,604 ft.

Oil Field Corp.'s No. 1 Simmons, 330 ft. S, 330 ft. E, NW cor., Sec. 13-18-13 ..... D.S. test 3,556-3,602 ft; S.W; T.A. 3,602 ft.

VAN BUREN COUNTY

Glenn Kohle et al, trustees' No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY
(Cable tools)

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32..... S.D; W.O. 602 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30..... S.D. 1,697 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32. U.R. 8-in. to T.D. 1,500 ft.

H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29. Drlg. 1,600 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21..... S.D. 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Joe Burnham et al's No. 1 No. 1 G. W. Burnett, 150 ft. W, 400 ft. S, NE cor. G. W. Burnett 76 ac., in W. H. Janes Sur. ..... Base Austin chalk 3,095 ft; top red beds 3,145 ft; S.D. 3,150 ft.

Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardige 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur. ..... S.D. 500 ft.

Lee Timberlake et al's No. 2 Tidwell, 250 ft. E, 250 ft. S, NW cor. Tidwell tr. in Jos. Eskell Sur. ..... Derrick.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr., in J. H. Murphy Sur. ..... Cored sand 3,510-10 ft; drlg. 3,600 ft.

CASS COUNTY

Wesley Morse et al's No. 1 Henderson, 800 ft. E, 1,100 ft. S, NW cor. C. E. Bailey Sur. ..... Derrick.

Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor., J. A. Stephenson Sur. ..... Top chalk 1,935 ft; drlg. 2,000 ft.

John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. .... Cored sandy lime; small show oil and gas 2,257 ft; S.D; W.O.

The Texas Co.'s No. 1 Citizens State Bank, 2,793 ft. W, 300 ft. S, NE cor., Jas. Watkins Sur. ..... Drlg. lime and shale 3,781 ft.

MARION COUNTY

P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. ..... Claim 5-ft. core showing oil 1,884 ft; S.D. waiting for 8-in. csg.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. .... S.D. 2,865 ft.

Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .... Swedging 2 joints collapsed 8-in; arranging to cmt. 6⅝-in. and packer 2,182 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas. Mason Sur. ..... Gas show tested dry; coring hard lime 4,423 ft.

SHELBY COUNTY

Chapparell Oil Co.'s No. 2 Holt, Matthew Moore Sur. .. T.A. hard lime 3,350 ft.

G. R. Ridgeway's No. 1 G. D. Parker, 4,980 ft. E, 750 ft. N, SW cor., Jessie McKelvey Sur. ..... S.D; W.O.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e.. Fishing 6-in. and tools 2,392 ft; T.D. 2,735 ft.

ATTALA COUNTY

Ark.-La. P. L. Co.'s No. 1 H. A. Moore, 500 ft. W, 330 ft. S, N cor. SE NW, Sec. 2-15-5e ..... Drlg. hard chalk 2,798 ft.

CLAY COUNTY

Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-15-5.... Drlg. 2,252 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ..... S.D. 1,700 ft.

GRENADA COUNTY

F. E. West et al's No. 1 Dubard, NW NW, Sec. 18-22-4.. Derrick.

HINDS COUNTY

Attkison & Dyers' No. 1 Wiggins, Sec. 33-6-1e..... Began drlg. Nov. 25.

Cane River O. & G. Co.'s No. 1 Kabbles, NE cor. SW SW, Sec. 15-5-1e ..... Drilled plug; swbd. S.W; showing little gas 2,560 ft; drlg. brown chalk 2,684 ft.

Gulf Ref. Co.'s No. 1 McLaurin, 1,230 ft. S, 1,410 ft. W, NE cor., Sec. 30-6-2e ..... Cmtd. 9-in. 2,466 ft.

Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e ..... Rig up.

Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Sec. 3-5-1e ..... Rig up.

Dr. Barney Kennedy's No. 1 fee, 150 ft. E, 200 ft. N, SW cor. NE NE, Sec. 34-6-1e ..... Location.

Love Pet. Co.'s No. 1 Maley, SE cor., NW, Sec. 15-5-1e .. Top Midway 2,387 ft; top chalk 2,487 ft. and cmtd. 6⅝-in; claim oil show estimated 10 bbls., 13° gravity clean oil, no gas 2,487-2,490 ft; flowed 25 bbls. oil and 300 bbls. wtr. 105° F; T.D. 2,494 ft; blowing wild into pits.

Love Pet. Co.'s No. 1 Morton Lbr. Co., 1,500 ft. E, 1,525 ft. N, SW. cor., Sec. 34-6-1e ..... Cmtd. 6⅝-in.

Miss. Pet. Co.'s No. 1 Solvent Inv. Co., NE cor. NE SW SW, Sec. 14-5-1w ..... S.D; shale 2,805 ft.

Miss.-Tex. Oil Co.'s No. 1 Negro Fair Assn., SW cor. NW SE, Sec. 28-6-1e ..... S.D; 6⅝-in. parted 500 ft. off bottom; S.D; W.O. 2,479 ft.

Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,905 ft; will drop from report.

Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ..... Derrick.

HUMPHRIES COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12¼-in. 60 ft; S.D.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keys, C NW NE, Sec. 21-2-10 ..... Rig up.

LAUDERDALE COUNTY

J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14 ... Derrick.

LAFAYETTE COUNTY

Banks-Good et al's No. 1 May, 113½ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

MADISON COUNTY

Barney Kennedy et al's No. 1 Raymond, 300 ft. E, 1,800 ft. N, SW cor., Sec. 32-7-2e ..... Cmtd. 12½-in. 706 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... Resumed operations Oct. 2; recovered lost bailer; S.D; W.O 3,007 ft.

Amory Pet. Co.'s No. 3 Carter, C SE SE, Sec. 7-13-17 ... Drlg. sand 1,230 ft.

Amory Pet. Co.'s No. 1 Harris, SW cor. SE SE, Sec. 18-13-17 ..... Derrick.

Associated Oil Co.'s No. 1 School, SW cor. SW SE, Sec. 16-15-17 ..... Began drlg. Aug. 26; S.D. 32 ft

Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 ..... Drlg. 550 ft.

RANKIN COUNTY

R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e.. S.D. 900 ft.

Cleve Love's No. 1 Muse, SE cor. SW SW, Sec. 32-7-4e .. Rig up.

Love Pet. Co.'s No. 1 Moore (was Interior Oil Co.'s), 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e.. S.D. 900 ft.

Millstein O. & G. Co.'s No. 1 Gammill-Hartsfield, 400 ft. E, 400 ft. N, SW cor. SW SE, Sec. 6-5-2e ..... Began drlg. Nov. 24.

Sabine O. & G. Co.'s No. 1 Taylor, SE cor. SW NE, Sec. 6-5-2e ..... S.D. 2,320 ft; waiting for csg.

Jackson Royalties, Inc.'s No. 1 Pate, NE cor. NE SE, Sec. 12-5-1e ..... Began drlg. Oct. 5; cmtd. 13⅜-in. 280 ft; drlg. shale 2,130 ft

Cleve Love et al's No. 1 Brown, C NW SE, Sec. 12-5-1e.. Began drlg. Oct. 9; drlg. 1,200 ft.

Pearl River O. & G. Co.'s No. 2 Pate, SE cor. SW SE, Sec. 12-5-1e ..... Began drlg. Oct. 7; cmtd. 10-in. 292 ft.

WARREN COUNTY

Raymond A. Moore et al's No. 1 Clark, SE, Sec. 31-16-5 (no check) ..... Derrick.

Vicksburg Oil Co.'s No. 1 Dornbush, 2,080 ft. S, 1,520 ft. W, NE cor., Sec. 8-18-5 ..... Drlg. 1,600 ft.

WINSTON COUNTY

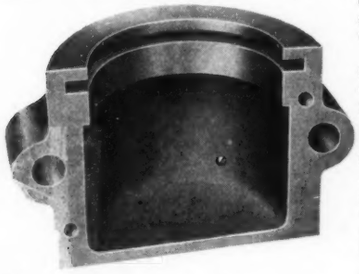
Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14. Drlg. 1,630 ft.

Oil Field Equipment and Supplies

CARTHAGE ANNOUNCES CROWNBLOCK BEARING

The Carthage Foundry & Machine Co., Carthage, Mo., has recently announced the design of a new type of crownblock bearing.

The chief feature of this grease-sealed bearing is its method of retaining the lubricant and excluding dirt and grit. This is accomplished by means of a simple but effective spring packing ring which automatically adjusts itself for any wear. The upper half of the bearing is in direct contact with the grease at all times.



The bearing metal is a special bronze suitable for high bearing pressures such as are encountered in this service. This bushing consists of a lower half which may be reversed in case uneven wear takes place. A collar on the upper half of the bearing holds the shaft in position.

By use of a specially designed clamp the bearing may be adjusted either sidewise or lengthwise on the I beam, making it possible to get proper alignment of the bearing with ease.

This bearing has demonstrated that it will run for long periods without attention. One filling of grease usually lasts throughout the drilling period, thereby eliminating many trips to the top of the derrick.

A complete description of this bearing is set forth in illustrated folders recently issued by the company, copies of which may be obtained upon request.

DEADWEIGHT GAUGE FOR TAKING GAS PRESSURES

The Nicholson Clock Co. of Tulsa has placed on the market, a new deadweight gauge for taking gas pressures. Among features enumerated by the company are these:

Has a sturdy mechanism and is not constantly in need of adjustment.

Gauges pressure in the simplest way, by the use of dead weights.

May be carried anywhere, packed and securely attached in a strong oak case, 5½"x12"x6¾", equipped with handles.

There is only one movable part.

Has no glass or delicate parts to break and no loose attachments to jostle about. The weight discs when not in use are firmly clamped to the column with the other weights.

Can take any pressure from 5 pounds to 505 pounds, in 1-pound intervals. Extra weights can be purchased to make maximum weight desired.

In addition to the deadweight gauge the Nicholson Clock Co. manufactures other products that bear the "Nick of Time" brand and are sold to the oil industry.

BLOWOUT PREVENTER INVERTED

In The Oil and Gas Journal of October 2, 1930, page 147, an illustration of the combination blowout preventer and tubing head manufactured by the Baash-Ross Tool Co., Los Angeles, Calif., appeared through an error upside down.

DIRECT-CURRENT DRIVE WITH VOLTAGE CONTROL

The General Electric Co. announces a direct-current drive, with generator voltage (Ward Leonard) control, for application to oil-well rotary drilling rigs. This makes available for oil-well drilling the many advantages of direct-current drive with drooping generator voltage characteristics and generator field control successfully used in other applications, such as electric shovels, oil-electric locomotives, etc.

Each equipment consists of two duplicate direct-current generators with direct-connected exciters, one or two direct-current motors for driving the drawworks, two duplicate direct-current motors for driving the mud pumps (one being a spare motor), and the necessary control and protective equipment. The generators are driven by a single or two separate electric motors or, if central station power is not available, by two duplicate internal combustion engines.

The generators and control panels are located remotely from the drilling rig and hence are of open construction. The drawworks and mud-pump motors, of necessity located at the well, are of the totally enclosely, forced-ventilated type, air for ventilation being supplied by blowers located at a sufficient distance from the well to insure a supply of air free from explosive gases. The generator field controllers and remote control push buttons and switches, located at the derrick, are oil-immersed.

The following advantages are claimed by the manufacturer:

1. It is believed that the use of direct-current motors capable of a wide range of speed adjustment will permit the simplification of the drawworks by omitting one or more of the gear reductions.

2. The drooping voltage characteristic of the generators definitely limits the maximum torque which the motors can develop; thus, by proper selection and adjustment of the generators and motors, the mechanical equipment, particularly the mud pumps, as well as the drilling rigs, mud pumps and electric equipment itself, may be protected against damage from overloads or from improper handling.

3. When internal combustion engines are used as primary power sources, the generators are so adjusted that the maximum input to the generators cannot exceed the rated output of the engines, thus making it impossible to stall the engines by overloading the electric equipment.

4. The drooping voltage characteristics of the generators make them inherently selfadjusting in the division of the load, whether operating in parallel or connected individually to separate motors for driving the drawworks.

5. With any fixed value of generator field excitation the generator voltage—and therefore the speed of the motors—varies with the load, being high at light loads and low at heavy loads. The torque developed by the motors is inversely proportional to the speed, thus making it possible to handle the hook at high speed when loads are light, but also making it possible to handle heavy loads at low speed without exceeding the capacity of the driving engine.

6. Any stoppage or clogging of the discharge line of the mud pump is manifested immediately by the slowing down of the pump. As the pump slows down the torque developed by the motor increases, giving a correspondingly increased pressure in the pump, thus tending to clear the line and re-establish normal conditions.

A bulletin descriptive of 1¼-inch and 2-inch pipe and nipple threading machines has been issued by the Landis Machine Co., Waynesboro, Pa.

TRACKSON HIGH SHOVEL IS NOW IN PRODUCTION

The new Trackson high shovel for the Model 20 McCormick-Deering tractor is now in production, after completing thorough tests in the laboratory and in the field.

Mounted on the tractor, either with Trackson crawlers or with wheels, it digs, moves, and loads materials at fast speed in one continuous operation and with only one man. Although it has a high dumping clearance for loading big trucks, the new machine also has all the advantages of a low-lift shovel for digging.

Oil field and pipe line contractors, roadbuilders and others will be interested in this machine.

The Trackson high shovel does not interfere with the use of the tractor for drawbar work. When the day's program includes hauling trailers, dump wagons, etc., pulling big scrapers, graders, or other road machines, or snatching a big truck from the mud, the shovel may merely be locked in a partly raised position and the tractor moves right along, as easily as it would without the shovel mounting.

One of the improvements of this new shovel is the fact that the bucket is held close to the tractor when it is in the digging position as well as when raised to its maximum height. The result is better balance and greater effectiveness for digging.

NEW LUFKIN CATALOG OUT

An informative catalog relating to the application of reduction gear to oil field pumping and drilling, and referred to as an engineering handbook for the production manager, is announced by the Lufkin Foundry & Machine Co., Lufkin, Tex., manufacturer of worm gear and herringbone gear units, and auxiliary oil field equipment. Besides describing products manufactured by the Lufkin company, the catalog contains engineering information valuable to oil company engineers and others engaged in the production of oil. Blue print setting plans and "hook-up" of all types of unit applications are set forth attractively in the catalog. A part of the book is devoted to the efficiency of the worm gear and herringbone gear and to tests conducted in co-operation with the Texas A. & M. University. A "unit selection" guide will be found helpful to those in remote oil fields in the selection of Lufkin units. A sepia section offers a pictorial history of the Lufkin unit. This 120-page catalog will be mailed to interested oil men anywhere upon request to any branch office, or to the factory in Lufkin, Tex.

TREATMENT FOR ROTARY MUDS

Stabilite, a treatment for rotary drilling muds, has been developed by the Visco Products Co., Inc., Houston, Tex., to meet certain conditions encountered in oil drilling which have been sources of trouble and expense to petroleum producers. It has the property of making a sticky gumbo mud fluid and stable. Instead of becoming thick and fluffy after continuous circulation, a Stabilite treated mud, the manufacturer says, will remain fluid and practically free from emulsified gas.

A Stabilite treated mud is said to remain fluid when agitated and will release occluded gas and drop cuttings, but when it becomes quiet as would be the case if the drill stem and pumps were stopped, a soft gel immediately sets in and prevents the settling of sand and cuttings in the hole. Upon running the drill stem or pumps, this gel again changes to the fluid state. The mud may be alternately gelled and made fluid as many times as desired.

HEAVY-DUTY CLUTCH IS INTRODUCED BY FAWICK

An addition to the heavy-duty industrial clutch field is a balanced expanding shoe clutch manufactured by the Fawick Manufacturing Co., Waukesha, Wis., from the patented designs of Thomas L. Fawick, inventor and automotive engineer. This type of clutch has many uses in power driven machinery for the oil fields and wherever clutches of this general type can be applied.

Besides its compactness, light weight and easy adjustment, the clutch employs large surface contacts which are said to result in low pressures and long life for every part. The expanding shoes are connected to a system of counter weights which are applied through a 3:1 leverage to the toe of the shoe and automatically maintain their effect regardless of wear, making the effort of engagement and disengagement the same under all conditions of load and service.

Tightness of rotating parts is achieved by the liberal use of steel stampings, hollow steel pivot pins and steel forgings. The molded asbestos clutch facings, similar to those used for heavy truck and bus brakes, are estimated to have a capacity of 2,000,000 clutch engagements. This is attributed to the large capacity for dissipating heat inherent in this type of clutch, coupled with its light loading pressures.

The adjustment of the clutch is simple and requires no tools. It is accomplished by a small worm meshing with a gear, directly back of the operating yoke, which engages three eccentric studs carrying the inner ends of the shoe toggles. It is said to be impossible for one shoe to become tighter than the others or to get the clutch out of balance because all adjusting parts are moved simultaneously.

Another feature of this clutch is its cool running properties. The location inside the flywheel with the driving shoes in contact with the rim of the wheel itself, affords a large body of metal through which the heat is dissipated and which is ventilated by the fan action of the revolving clutch shoes.

TRADE LITERATURE RECEIVED

The Fusion Welding Corp., Chicago, announces a catalog of welding accessories, filling the purposes of a guide for those ordering electric arc welding accessories and supplies.

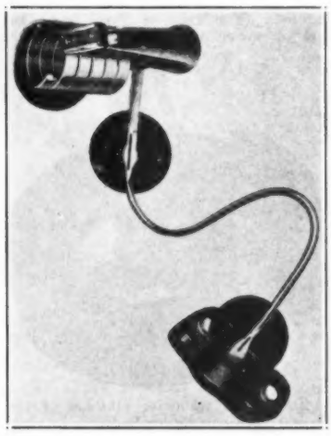
An illustrated folder showing several recent typical operations of the company in the petroleum and iron and steel industries is being distributed by Arthur G. McKee & Co., Cleveland, Ohio.

The Turbo Mixer Corp., New York, has issued a bulletin of 12 pages describing and illustrating Turbo equipment used in mixing, dissolving, emulsification, gas absorption, heat transfer and other processes.

Oil Field Equipment and Supplies

NEW GAUGE MOVEMENT IS PERFECTED BY FOXBORO

The Foxboro Co., Foxboro, Mass., has perfected an alloy-steel helical spring movement for its recording gauges. It is of one-piece tubing, all steel and all



welded. It combines maximum safety with high resistance to commonly encountered corrosive agents.

In case of fire these recording gauges will not prove a source of danger, their parts will not give way and add fuel. High temperatures and high pressures can be withstood by these gauges with the result that there is said to be no danger of their letting go to spray hot fluids on workmen nearby. Besides the safety feature, these steel spring gauges allow uninterrupted service. They will last long under trying conditions.

During the last two years Foxboro has placed these steel welded movements on high-pressure work in central stations and casing and tubing work in the natural gas field; cracking units in refineries, various processes in air reduction plants and on processes and in power plants in numerous other industries. After continuous operation in the field the Foxboro company says it has found the instruments equipped with these steel helicals to be accurate to within less than 1 per cent.

With the introduction of this new gauge movement the Foxboro company has prepared Bulletin 168 which describes it in detail. Copies may be had by writing to the company.

MULTIPLIER TABLES COMPILE

The Pittsburgh Equitable Meter Co., 400 Lexington Avenue, Pittsburgh, Pa., has published a set of multiplier tables, factors of which are used to correct volumes at higher temperatures to volumes at a given base pressure. Multipliers are based on Boyle's law. Instructions for the use of the tables are given. The pages are punched to fit into the standard Lefax, or similar binder. From time to time the company plans to publish additional tables and information which will be printed in the same form, and which can be assembled into a binder for reference.

The Consolidated Ashcroft Hancock Co., Inc., of Bridgeport, Conn., has opened Pacific sales headquarters at 2318 East Eighth Street, Los Angeles, Calif., with Charles Stepan in charge. The San Francisco and Seattle agents will continue under the personal direction of Mr. Stepan.

NEW FACTORY TO MAKE LARGE MONO-CAST PIPE

A new mono-cast centrifugal pipe shop for large sizes up to and including 24-inch, built by the American Cast Iron Pipe Co., Birmingham, Ala., is scheduled to begin operation on a commercial basis by the first of the new year. The new shop, of steel, fireproof construction, will have a potential capacity of 200 tons of centrifugally cast iron per shift, and is so designed that it can be operated 24 hours a day. The pipe made in the new shop will be in 14, 16, 18, 20 and 24-inch sizes. It will be in 16-foot lengths, of bell and spigot type, with a bead cast on the spigot end.

Owing to uniformity and greater strength of metal, mono-cast pipe can be materially reduced in weight and metal thickness without sacrificing any of the safety factors for a given working pressure, the manufacturing company says. In the manufacture of mono-cast centrifugal pipe these are certain refinements which increase its value. Among these is the bead which is cast on the spigot end and which centers the spigot in the bell and anchors it there to stay. The bead on mono-cast pipe offers protection against breakage to spigot ends in transit and makes the joint hold together in service.

NO SWAB ACTION WITH WIGGINS CASING GUARD

The Wiggins casing protector, manufactured by the E. B. Wiggins Oil Tool Co., Inc., Los Angeles, Calif., is made of water and oil-resisting rubber molded over a heavy fabric base. Large vertical grooves in the exterior of the protector body provide ample space for circulation and prevent swabbing action in the well when removing the drill pipe.

In the side is a butt joint that allows the protector to be installed on the string without putting it over the end of the drill pipe. The heavy layer of fabric to which the rubber is vulcanized fits against the drill pipe and prevents expansion of the protector. The protector is held on the drill pipe by special steel wires that fit in grooves in the rubber. A Wiggins protector, the manufacturer says, will not creep or slide on the drill pipe and cannot jump over collars or joints. These protectors can be used on all types of drill pipe, including the new style in which the joints are flush.

Simplicity of installation makes it possible to remove the protector from the drill pipe when not active and store it, or it may be used on other stands that are in operation.

GENERAL SUPPLY OFFERS NEW RAT-HOLE ELEVATOR

The General Supply Co. of Houston, Tex., is introducing the rat-hole elevator, constructed with a hand hold to guide after picking the greyhound out of the V

and putting it in the rat-hole to make the swivel connections. There is a ring on the latch through which the hook on catline fits and when slack is taken up on the catline it locks the jaws. This supplants the old method of using the big elevators or tying the catline around the greyhound and the dangers attached thereto. The elevator is of steel construction and made in sizes from 3 to 6 inches.

CHAIN BELT CO. ANNOUNCES PROMOTIONS IN ITS STAFF

C. F. Messinger

H. S. Greene

C. F. Messinger, vice president of the Chain Belt Co. of Milwaukee, Wis., has been elected general manager. H. S. Greene, formerly with the Barber-Greene Co., Aurora, Ill., who joined the Chain Belt Co. in 1929, succeeds Mr. Messinger as general sales manager. Brinton Welser, formerly secretary, was elected director and vice president. J. C. Merwin was re-elected vice president. A. R. Abelt was elected secretary and he continues in charge of chain sales. W. H. Brandt, formerly assistant secretary, becomes assistant to the president.

In announcing these changes, C. R. Messinger, president of the company, said: "The expansion of the company had reached a point where it was necessary to provide additional executive personnel to supervise and extend the development of a wide variety of products in the chain, conveying and construction equipment divisions. With the exception of Mr. Greene, all of the officers elected have been with the company for at least 15 years. Mr. Greene has been in charge of the co-ordination of sales and distribution work, and he will continue to carry this on as general sales manager."

SALES DIVISIONS CREATED

The Emsco Derrick & Equipment Co., Los Angeles, Calif., has created two divisions in its sales department. W. G. Fitzpatrick is made sales manager of the derrick division to continue with headquarters in Dallas, Tex., and George W. Walton becomes sales manager of the machinery divisions, his headquarters being moved from Tulsa to Dallas.

FRITCHEY DISTRICT MANAGER

The Pittsburgh Equitable Meter Co., manufacturer of meters and pressure regulating equipment, has created an additional sales division in Iowa with headquarters in Davenport. A. L. Fritchey, long national representative of the company, handling its entire line, has been made district manager of this territory.

TURBINAIR CATHEAD IS USEFUL ABOUT OIL RIG

The class HW-7 Turbinair cathead manufactured by the Sullivan Machinery Co., Chicago, was designed as a general utility power winch for odd jobs of hauling or hoisting around oil field rigs. The cathead uses air or steam power interchangeably, and develops 7½ horsepower. It is rated at a vertical lift of 2,000 pounds with 80 pounds air or steam pressure, and a hoisting or hauling speed of 125 feet per minute. The speed is adjustable by throttle control. For pressures higher than 100 pounds an inlet reducing bushing is used.

The Sullivan Cathead is designed for bolting to a 12"x12" post or derrick timber, and is ordinarily set up with the axis of the drum in a horizontal position, so that the catline can extend either horizontally or vertically. It may be set up vertically if desired.

In connection with standard cable tool drilling rigs, the cathead may be installed immediately in front of the brake band of the bullwheel. A 12"x12" post can be set into the sills under the derrick floor, and when bolted to the side of this post, the cathead faces directly onto the walk. When thus placed, the cathead, with or without the assistance of snatch blocks, can handle casing, heavy timbers, tools, etc., from the ground onto the walk and into the derrick. By running a catline over the sheave in the crown, casing, drill stems, or other equipment can be handled in the derrick itself.

On rotary rigs, which usually are equipped with catheads the Sullivan cathead will be found useful for supplementary jobs, especially during rigging up.

P. N. Guthrie, Jr., has been elected president of the Reading Iron Co., with offices in the Baer Building, Reading, Pa.

WASTE BIG PROBLEM DECLARES R. C. HOLMES

R. C. Holmes, president of The Texas Corporation, in a statement to the New York American, stresses the fact that waste is the greatest problem in the oil industry and that it is vitally important for the industry to adjust and reconcile itself to the actual conditions of conservation. Mr. Holmes points out that the waste in the producing branch of the industry, alone, in a period of a little over 20 years has been upward of $4,000,000,000, calculated at approximately 10,000,000,000,000 feet of gas, over 2,000,000,000 bbls. of recoverable oil, and approximately $1,000,000,000 in unnecessary drilling facilities and other expense which could have been avoided had the business been carried on in an orderly, economical and conservative way. To a very large extent this waste continues, probably the greatest being in the waste of gas, which amounts to fully one-third of the quantity being consumed.

Mr. Holmes states that a need is felt for modification or a more liberal interpretation of the antitrust laws, and that the future for conservation is bright since it is now a well established policy of the Federal Government and of the oil-producing states.

CENTRAL WEST FIELDS

(Continued from Page 62)

duced an initial of 20 bbls. from 3,480-87 feet, also struck a 10-bbl. initial producer in No. 3-1,450 G. M. Wilson farm, Section 11, same township, at 3,569 feet.

In Belmont County, Somerset Township, M. W. Fulton and others have an average gas well in No. 1 Robert Rose farm, Section 27, in the Berea sand at 1,965 feet.

In Geauga County, Parkman Township, Wittmer Properties, trustee, made a location on the Eli N. Miller farm, Section 10, and in Lake County, Concord Township, G. G. Trowbridge made a location on his own farm, in Lot 48.

INDIANA

The recent completion made by William M. Stewart and others in No. 10 Davis Brothers farm, Section 27, Penn Township, Jay County, which showed an initial of 50 bbls. from the Trenton lime, should bring about further test work in that area. No. 11 is drilling on the same farm, while a mile west of the hamlet of Balbeck along the Balbeck pike, in Penn Township, the Flemwell Oil Co. is drilling No. 5 C. C. Harris farm, on the old oil map but reported now owned by James Sinton. In Hartford Township, in the northwestern part of Jay County, J. L. Peters, receiver, is reported to have abandoned Nos. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15 on the P. Mosier farm, Section 13. These wells were drilled many years ago and were located in the center of the then rich Indiana Field.

While Fred F. Bays, Sullivan contractor, drilled a dry hole on the W. C. Jamison farm, Section 19, Hamilton Township, Sullivan County, at a depth of 800 feet, he is now drilling another test in Curry Township, on the M. B. Jewell farm, Section 29.

Wells & Joyes are drilling a wildcat on the Elizabeth Roach farm, in Donation 211, Busseron Township, Knox County.

According to advice from Valparaiso, the San Juan Coal & Oil Co. struck a shallow gas at a wildcat on the Arthur Hanrahan farm, north of Valparaiso in Porter County, in the extreme northwestern part of the state, but will go deeper in hopes of finding additional pays of either gas or oil.

V. E. Bolyard and others are putting down a test on the Patoka Coal Co.'s property, Section 25, Patoka Township, Pike County.

ILLINOIS

The best completion reported from the Illinois Field was J. D. Toomey and others' No. 13 well, 200 feet from the north line and 700 feet from the east line of the Harrison Buchannan farm, northeast quarter, Section 10, Wabash Township, Wabash County, in the Allendale Field, which pumped 30 bbls. initial from 1,471 to 1,507 feet.

In the Robinson Field, Prairie Township, Crawford County, Gus Lowery and others are starting No. 5 on the J. P. Evans farm, Section 36. In Honey Creek Township, same county, Craig, Lowrie and others' No. 13 well, 600 feet from the south line and 350 from the east line of the Rudolph Weger farm, northeast quarter of Section 15, is estimated good for 3 bbls. at 1,016 feet. John Phipps drilled a dry hole in No. 9 well, 600 feet from the south line and 350 from the west line of the R. A. Funk No. 2 farm, southwest quarter, Section 36, same township, at 1,030 feet. W. C. McBride, Inc., is drilling on the Laughead farm, Section 3, Montgomery Township, same county.

The Pure Oil Co.'s test on the Robert Ramsey farm, Section 12, Johnson Township, Clark County, in the Casey Field, pumped five bbls. the first 24 hours.

Thomas Folks and others are drilling on the Wineburg Brothers farm, Section 18, Lakeside Township, Clinton County.

EASTERN FIELDS

(Continued from Page 66)

3,300 feet and which lies to the north and west of the gas well, which is the largest gas well east of well defined territory in either southwest Pennsylvania or West Virginia. No new locations have been made at the present time but it is stated that later additional tests may be made.

Operations in southwest Pennsylvania remain very quiet and there was little change in the situation. Two wells were completed, one in Greene County, was a 4-bbl. pumper, and the test of Freeman and Behm on the Charley Tripp farm in Morris Township, which was drilled on the Gordon stray sand at a depth of 3,301 feet. In Hanover Township, Beaver County, John Clatty completed a test on the Sophia Lynduff farm in the Berea sand and it has a light showing of oil which is going to be put to pumping.

MUST CUT DEEP IN EAST

BRADFORD, Pa., Nov. 28.—Runs in the Allegany district for the week ending November 22 averaged 7,180 bbls. daily and in the Bradford district 23,763 bbls. daily.

This total of 30,943 bbls. is comparable with 43,582 bbls. produced in these areas during the month of April, or a production of 71 per cent based on that month's output. Since the rate of production as suggested by the conservation boards of the Allegany and Bradford fields has been 60 per cent from September 21, it is evident that the producers as a whole have lifted 11 per cent more crude and this amount, or 4,800 bbls. daily, forms a considerable portion of the total amount of the now current excess production.

The conservation board's recommendation which limited the Bradford-Allegany district to 50 per cent of its April average production makes it necessary for operators in this district, if they adopt the recommendation, to cut down to 21,791 bbls., or 9,152 bbls. per day below the average daily production for the week ending November 22.

At a meeting of the board of directors of the Middle District Oil Association held at the courthouse in Warren it was decided to ask all oil producers in Warren County to return to a 30 per cent curtailment as recommened by the conservation board effective immediately and to continue until further notice.

SAFETY SNAKE FILM

At the monthly meeting of the North Texas chapter of the Petroleum Safety Council in Fort Worth, M. D. Gannon, safety supervisor of the Southern Crude Oil Purchasing Co., presided. George B. Alexander presented a moving picture of snakes, their habitats, and the method of extracting venom in the making of serum used by field men to combat the effect of bites by poisonous snakes. The chapter will hold its next meeting at Ranger around January 20 in an effort to call in as many field men as possible to see the moving picture.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 44)

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21 .....Drlg. 2,714 ft.
Mid-Western's No. 1 Polster, C NE SE Sec. 33-10-22 ....Shut down 4,297 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e .....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e...Shut down 2,387 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Shut down 1,645 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Drlg. 4,315 ft.

KAY COUNTY

Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 .....Location.
Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-3 .....Drlg. 525 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 .....Shut down 50 ft.
Blackwell's Oil & Gas Co.'s No. 1 Harshman, Sec. 2-26-1w.Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w..Fishing 1,175 ft.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w .....Drlg. 6,765 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Drlg. 7,306 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w .....Rig.
Riley et al's No. 1 Grebb, SW NE Sec. 6-7-16w .....Water 1,470-72 ft.; abandoned.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE NW Sec. 23-9-24 .....Wilcox 6,128-6,298 ft.; dry; plugged back to 5,426 ft.; comp. 5,401-5,550 ft.; 6,000,000 ft. gas.

LATTIMER COUNTY

Mid-Western Oil & Gas' No. 1 Bullo, C E half SW Sec. 3-6-19 .....Drlg. 300 ft.
LeFlore Oil Co.'s No. 1 McBee, NW cor., Sec. 3-7-21 ....Shut down 3,601 ft.
Mid-Western's No. 1 Morris, C NW SE Sec. 12-6-21 .....Shut down 2,075 ft.; dry.
Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .....Drlg. 2,760 ft.

LOGAN COUNTY

Slick and Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w...Drlg. Wilcox 5,735-43 ft.; dry: shut down.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w.Sand 4,919-42 ft.; made 870 bbls. 21 hrs. and 485 bbls. 24 hrs. the second 24 hrs.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Drlg. 5,660 ft.

McLAIN COUNTY

Prairie's No. 1 Parkinson, SW NW Sec. 22-7-2w .....Drlg. 5,550 ft.

MUSKOGEE COUNTY

Rebold's No. 1 Miller, SE NE NE Sec. 32-13-19 .....Rig.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.

NOBLE COUNTY

Barnsdall's No. 1 Miksch, NW SW Sec. 12-21-1 .....Drlg. 3,055 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 4,127-57 ft.; water; plugged back to 3,161-85 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Shut down 3,690 ft.

OKLAHOMA COUNTY

L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .....Shut down 5,515 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w .....Wilcox 6,697-6,771 ft.; shot with 90 qts. and 140 qts.; made 2,627 bbls. 7 days.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w .....Drlg. 7,135 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Shut down 6,700 ft.

OSAGE COUNTY

Millard & Stanley's No. 1, SE SW Sec. 4-28-7 .....Spudding.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 .....Rig.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Drlg. 1,155 ft.
L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 ....Drlg. 3,652 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ....Rig.

PITTSBURG COUNTY

C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 .....Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 .....Rig.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ....Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 2,905 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 .....Location.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w.Shut down 130 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .....Rig.
Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w .....Shut down 280 ft.

WOODS COUNTY

Sinclair Oil & Gas Co.'s No. 1 Showalter, C SW SW Sec. 33-27-16w .....T. D. 7,280 ft.; plugged back to 6,730 ft.; shot 30 qts. 6,805-25 ft.; no results; plugged back to 4,885 ft.; shot 40 qts. 4,885-4,985 ft.; drlg. out bridge 2,900 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w .....Shut down 1,387 ft.
Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .....Shut down 7,445 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Argus Prod. Co.'s No. 1 Fischer, C NW Sec. 29-6-14 .....Location.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 .....Shut down 4,425 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e .....Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Stewart-Howland's No. 1 Howard, NW SE NW Sec. 6-4s-11 .....Drlg. 100 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 .....Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..Shut down 425 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e...Shut down 485 ft.
Marshall's No. 2 Fee, C SW NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 265 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Shut down 2,590 ft.

COTTON COUNTY

Gilbert-Lowery's No. 1 Harneg, C SE SE Sec. 4-2s-11w..Rig.

LOVE COUNTY

Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w...Shut down 3,130 ft.

MARSHALL COUNTY

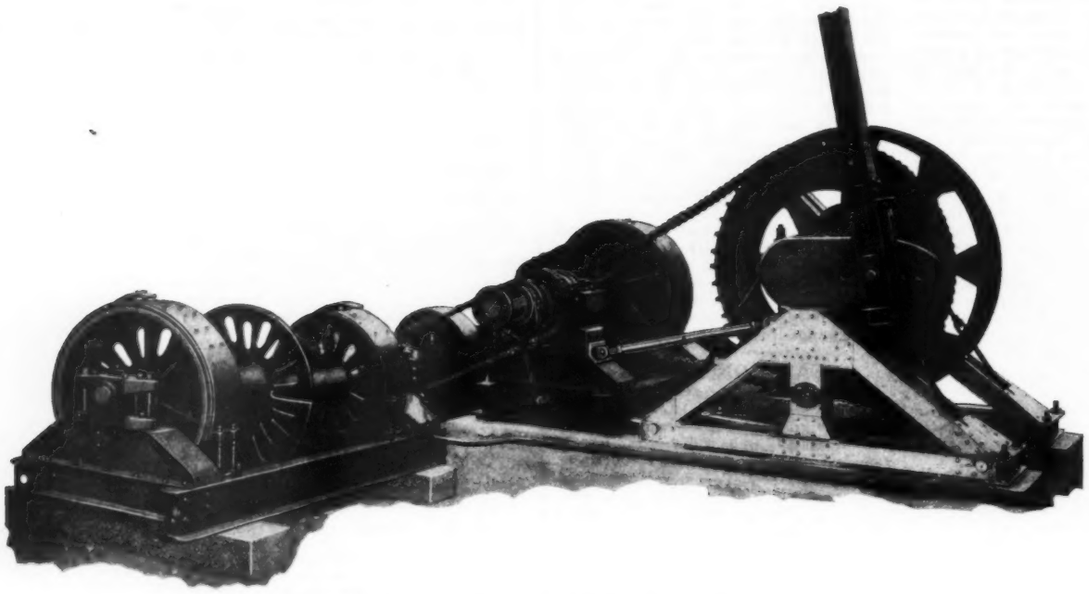
D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6 .....Drlg. 1,275 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6 ...Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e .....Shut down 370 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 .....Shut down 2,287 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-15-7w .....Shut down 1,375 ft.
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n ....Shut down 1,060 ft.



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CALIFORNIA OIL FIELD OPERATIONS FOR OCTOBER, 1930

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for October amounted to 18,244,053 bbls., an average of 588,518 bbls. per day. This is a decrease of 10,959 bbls. per day under September production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 933,467 bbls. The total stocks at the end of the month were 179,500,485 bbls. The total stocks decrease for 1930, up to October 31 was 5,263,248 bbls.

Eighty-two wells were completed during the month with an initial daily production of 60,139 bbls., compared with 47 wells completed during September with an initial production of 52,043 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

District—	Barrels per month	Daily average Oct., 1930	Daily average Sept., 1930	Daily average Oct., 1929
Kern River	379,270	12,235	12,704	18,412
Mount Poso	264,526	8,533	9,581	11,022
Fruitvale	80,632	2,601	2,341	2,339
Round Mountain	125,264	4,041	4,134	1,065
McKittrick	121,253	3,911	4,009	4,640
Midway-Sunset	1,842,401	59,432	61,531	70,769
Elk Hills	542,512	17,500	17,855	17,249
Lost Hills-Belridge	144,826	4,672	2,258	4,312
Coalinga	287,925	9,288	9,131	9,459
Kettleman Hills	760,606	24,538	22,027	10,081
Wheeler Ridge	18,202	587	591	671
Watsonville	1,938	62	63	63
Santa Maria	79,119	2,552	2,968	3,023
Capitan	.....	.....	.....	78
Summerland	7,751	250	281	507
Elwood	1,115,642	35,988	37,588	29,410
Santa Barbara	.....	.....	60	31
Rincon	73,122	2,359	2,569	2,844
Ventura Avenue	1,429,755	46,121	46,635	60,943
Ventura-Newhall	151,078	4,873	4,990	4,793
Los Angeles-Salt Lake	44,157	1,424	1,560	1,496
Whittier	41,990	1,355	1,402	1,541
Fullerton (Brea Olinda)	342,399	11,045	11,582	13,538
Coyote	312,787	10,090	10,868	10,478
Santa Fe Springs	2,935,623	94,697	101,957	268,376
Montebello	221,481	7,145	7,099	9,368
Richfield	271,167	8,747	9,057	15,117
Huntington Beach	879,420	28,368	28,958	41,746
Long Beach	3,040,799	98,090	100,418	162,769
Torrance	319,626	10,311	11,235	13,466
Dominguez	318,944	10,289	9,954	8,491
Rosecrans	194,768	6,283	6,423	7,412
Inglewood	466,344	15,043	17,054	22,978
Newport	1,240	40	40	30
Seal Beach	580,923	18,740	18,899	37,003
Potrero	50,415	1,626	2,002	1,077
Lawndale	10,910	352	269	989
Playa Del Rey	785,238	25,330	19,384	.....
Total	18,244,053	588,518	599,477	867,586
September	17,984,306	599,477	.....	.....
Decrease	*259,747	10,959	.....	.....

*Increase.

STOCKS

	Oct. 31, 1930	Sept. 30, 1930	Oct. stock decreases	Oct. 31, 1929
Heavy crude, heavier than 20° A.P.I., including all grades fuel	109,299,903	110,959,288	1,659,385	112,533,183
Refinable crude, 20° A.P.I. and lighter	42,660,721	42,207,293	*453,428	42,728,740
Gasoline	16,174,667	15,906,443	*268,224	16,184,992
Naphtha distillates	3,015,474	3,131,555	116,081	3,506,174
All other stocks	8,349,720	8,229,373	*120,347	10,022,166
Total all stocks	179,500,485	180,433,952	933,467	184,975,255

*Increase.

DEVELOPMENT

District—	New rigs up	Active drlg.	Completed	Daily initial output	Active producing	Abandoned Drillers	Abandoned Producers
Kern River	8	6	1	240	916	0	0
Mount Poso	0	2	0	0	69	0	0
Fruitvale	0	2	0	0	17	0	0
Round Mountain	1	2	3	1,100	28	1	2
McKittrick	0	0	0	0	254	0	0
Midway-Sunset	0	11	9	1,770	1,884	0	2
Elk Hills	0	0	0	0	239	0	0
Lost Hills-Belridge	6	6	0	0	168	0	0
Coalinga	0	0	0	0	734	0	0
Kettleman Hills	5	10	0	0	8	0	0
Buttonwillow gas field	0	1	0	0	0	0	0
Wheeler Ridge	0	0	0	0	33	0	0
Watsonville	0	0	0	0	6	0	0
Santa Maria	0	2	0	0	186	0	1
Capitan	0	1	0	0	1	0	0
Summerland	0	0	0	0	97	1	0
Elwood	3	3	3	18,660	51	0	0
Santa Barbara	1	0	0	0	1	0	0
Rincon	1	3	0	0	33	0	0
Ventura Avenue	2	21	1	2,270	149	0	0
Ventura-Newhall	1	11	1	105	411	1	0
Los Angeles-Salt Lake	0	0	0	0	269	0	0
Whittier	0	1	0	0	161	0	1
Fullerton	0	1	0	0	368	0	0
Coyote	0	2	1	288	198	0	0
Santa Fe Springs	1	0	9	1,658	459	0	1
Montebello	0	1	0	0	165	0	0
Richfield	0	0	0	0	172	0	0
Huntington Beach	0	3	2	95	410	0	0
Long Beach	13	72	12	8,239	895	1	1
Torrance	0	0	0	0	534	0	1
Dominguez	1	2	0	0	60	0	0
Rosecrans	0	3	1	130	107	0	0
Inglewood	0	0	2	737	214	0	0
Newport	0	0	0	0	4	0	0
Seal Beach	0	1	0	0	129	0	4
Potrero	0	3	2	345	17	1	0
Lawndale	0	1	0	0	8	0	0
Playa Del Rey	56	100	35	24,502	68	2	0
Miscellaneous drilling	16	166	0	0	0	12	0
October	115	437	82	60,139	9,523	19	13
September	99	470	47	52,043	9,543	15	51
Increase	16	*33	35	8,096	*20	4	*38
Average for year 1929	109	610	76	100,625	10,550	26	18
Average for year 1928	107	520	59	56,802	10,823	15	25
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,288	24	17
Average for year 1925	105	417	79	42,247	11,393	28	12

*Decrease.

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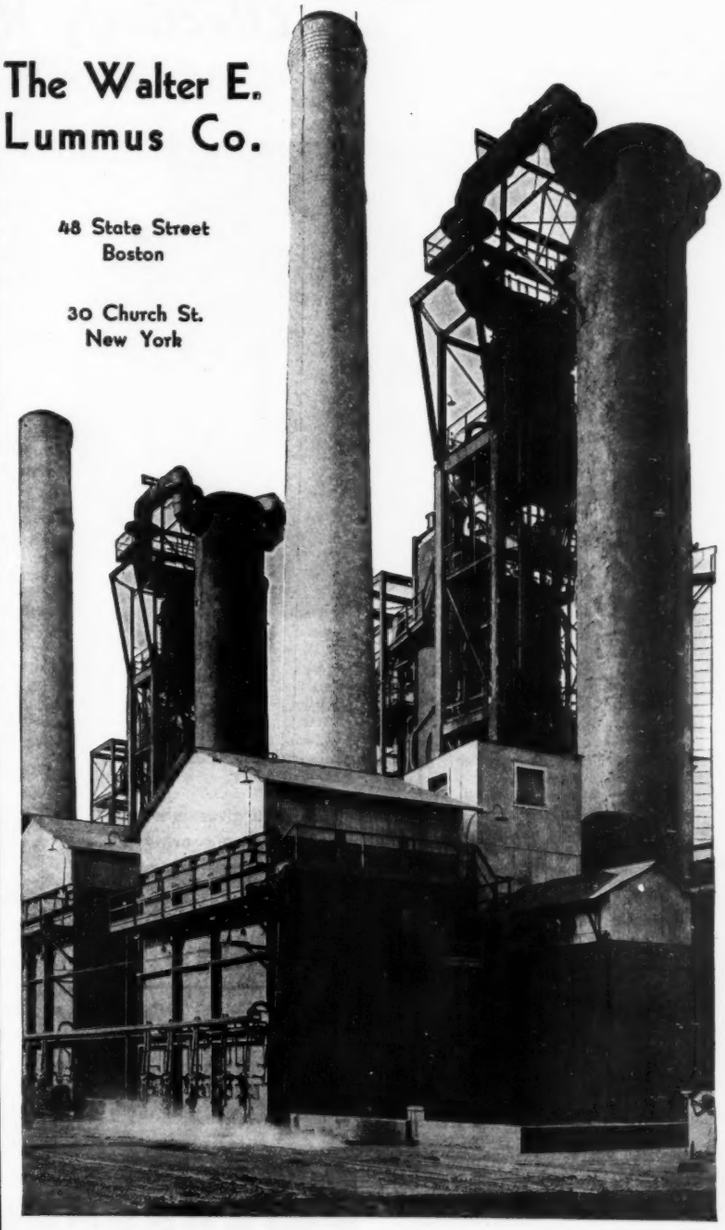

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LIGHT WEIGHT Naylor Pipe

Effectively Resists Vacuum Pressures

No. 4—External Hydrostatic Pressure Tests.

Arrangement used in making external hydrostatic pressure tests. Photo shows 20-inch Naylor Pipe.

THE results of authoritative tests show that Naylor Pipe is admirably suited to vacuum work on suction gas lines.

Ordinarily, light weight large pipes are unable to resist the external pressures to which they are sometimes subjected. The external pressure which usually causes trouble is the atmospheric pressure on the outside of the pipe, when, for any reason, a vacuum exists inside the pipe.

Recent tests made by Professor M. L. Enger and W. M. Lansford at the Materials Testing Laboratory of the University of Illinois to determine the resistance of Naylor Pipe to external hydrostatic pressure disclosed the fact that 84 lbs. per square inch are required to collapse 20-inch Naylor Pipe.

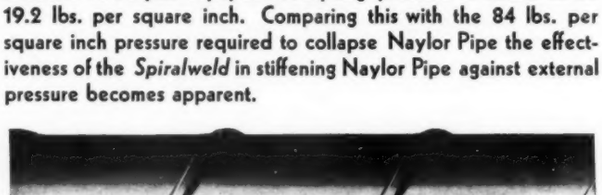
Experiments previously made show that the collapsing pressure for thin steel tubes is represented by the formula

$$p = 50\,200\,000 \left(\frac{t}{d}\right)^3$$

in which p is the pressure in pounds per square inch required to collapse the pipe, and $\frac{t}{d}$ is the ratio of the thickness to the diameter of the pipe.

Applying this formula to a pipe without the *Spiralweld* construction of Naylor Pipe, the collapsing pressure is found to be 19.2 lbs. per square inch. Comparing this with the 84 lbs. per square inch pressure required to collapse Naylor Pipe the effectiveness of the *Spiralweld* in stiffening Naylor Pipe against external pressure becomes apparent.

Catalog 30-2 gives more complete engineering and metallurgical data.



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Naylor Pipe

Maximum Structural Strength — Mo-lyb-den-um IRON — With Minimum Weight

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40'0". Ends made to wrought pipe standards for all types of coupling.

Toncan Copper Molybdenum Iron possesses a superior corrosion resistance making it the favored pipe material.

Where corrosion is not a problem, Naylor Pipe can be furnished in steel.

CANADIAN FIELDS

(Continued from Page 54)

set casing on the oil sand at 2,530 feet and is reported starting to drill into production. The test is midway between Monalta's No. 1 and Monalta's No. 3, both of which got production.

On the Alberta side, J. W. Elliott has contract for Vanalta Oils' No. 4 and derrick has been skidded to a location just north of Vanalta's No. 2, of which the new well is an offset. Operations in the Red Coulee Field have been hampered by drifted trails, and the road from the wells to the tank farm at Coutts is partially blocked. Deliveries of crude have been curtailed and considerable oil is in storage in the field. It is reported that Celtic Oils' No. 1, LSD 4, Section 17-1-16w4, will test the Sunburst horizon before drilling deeper. Ko-Top Oils' No. 1-A, LSD 1, Section 2-1-17w4, will probably be carried to the Ellis by new interests which are negotiating to take over part of the Ko-Top acreage and the unfinished test, which has been shut down at 259 feet. Capitol Oil & Gas Co.'s No. 1, LSD 3, Section 21-1-16w4, is shut down at 2,753 feet, and no further work will be done until spring. Dalco Oil & Gas Co.'s No. 2, LSD 7, Section 19-2-17w4, is reported temporarily shut down at around 2,200 feet owing to weather conditions.

Wainwright Field

In the Wainwright Field, east-central Alberta, Bethwain Oils' No. 2, LSD 9, Section 4-45-6w4, has been drilled into the sand below 2,281 feet, encountering some crude and considerable water. Considerable additional work is needed to put the well into satisfactory production, but it will probably be shut down for the present. Peninsular Petroleums, Ltd. is planning to recondition Wainwell Oils' No. 2, LSD 15, Section 36-44-7w4. This test originally got a strong gas flow, estimated 38,000,000 feet a day, at 2,038 feet, but it has been shut in for some time and the derrick has been demolished by a windstorm.

Ribstone Field

Cardium Syndicate, Ltd. has been incorporated under Dominion charter with office at Calgary to carry on development work in the Ribstone Field. Cardium's No. 1 has been located in LSD 16, Section 16-45-1w4. Algonquin Petroleums' No. 1, LSD 1, Section 20-45-1w4, northwest of the Meridian producers, is reported rigging up, to spud in some time in December. Raymond L. Cook has the contract. The company holds 1,000 acres under lease from Ribstone Oils, Ltd., in addition to extensive acreage on other Alberta structures. Officers of Algonquin Petroleums, Ltd. are: President, L. C. West; vice president, R. J. Hutchings; Secretary-treasurer, S. A. Annand.

Paint Earth Creek

On the Paint Earth Creek structure, Hudson's Bay Oil & Gas Co.'s Paint Earth No. 1, LSD 5, Section 27-39-15w4, is reported reaming at around 2,400 feet.

British Columbia Tests

In the province of British Columbia, McKenzie Syndicate's No. 1 on Canyon Creek near Kelowna has derrick up and is expected to spud in early in December. British Columbia-Alberta Oil Co. is rigging up for a test in SE Section 20-16-4e, near Abbotsford, not far from the Sumas Prairie Field. In the Cariboo district, Cariboo Oil Co.'s No. 1 near Australian is reported drilling below 437 feet.

Manitoba Operations

In northern Manitoba, Dauphin Oil Syndicate's No. 1, SE Section 14-24-20WPM is drilling 10-inch hole and underreaming at 1,300 feet where a fair show of high grade crude has been met in the Devonian limestone. The crude is reported to be a paraffin base product testing 63°, and several shows have been encountered, though no commercial production.

In the Manitou district, southern Manitoba, Commonwealth Petroleums' No. 1 structure test is reported coring around 450 feet.

Ontario Drilling

In the old Tilbury Field, Argo Gas & Oil Co.'s No. 1, William Mancell farm, a mile south of Fletcher, is reported setting casing at 880 feet. The test is expected to finish in about a week at 1,430 feet, which was the productive horizon in the Tilbury oil field some 25 years ago. Some gas has already been reported. F. H. Stover & Son of Chatham have the contract and standard tools are being used.

In Brant County, Ajax Oil & Gas Co.'s No. 10 on the Six Nations' Indian Reserve is reported to have been finished in the shallow gas horizon with a fair production.

Minister to Inspect Fields

Members of the Crude Oil Producers Association of Petrolia have invited E. B. Ryckman, minister of national revenue in the federal government, to visit the shallow fields in southwestern Ontario and examine the actual situation of the oil industry in that area. The visit is in connection with the application of the oil producers for restoration of the former government petroleum bounty of 52½ cents a barrel.

ROCKY MOUNTAIN AREA

(Continued from Page 54)

Petroleum Corp.'s No. 1 Coleman, NW cor. SE, Section 17-21-36, is bottomed at 2 946 feet in anhydrite and running the 9⅝-inch casing. Atlantic Oil Producing Co.'s No. 1 Coleman, SW NE NW, Section 17-21-36, is preparing to spud. Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, plugged back from 3,904 feet to 3,878 feet and is preparing to recover the gas which was cased off. It has 100 feet of fluid in the hole. At 3,762 feet it gauged 30,000,000 feet of gas. Continental Oil Co.'s No. 1 William Meyers, SW nor. NW, Section 28-22-36. is drilling at 4,304 feet in white lime.

Caprock Area—Lea County

Western Drilling & Engineering Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, set 8¼-inch at 2,772 feet and is waiting.

Lovington Area—Lea County

Galt, Brown and others' No. 1 State, SW NW NW, Section 9-15-35, is drilling at 2,790 feet in salt and anhydrite.

Eddy County

Lockhart & Co.'s No. 1 Livingston, C SW SW, Section 23-24-28. Pearce Canon district, is drilling at 2,020 feet in anhydrite. It had a hole full of salt water at 1,530 feet and a gas show at 1,835-40 feet. Getty Oil Co.'s No. 6 Dooley, C NW SW, Section 24-20-29. Twin Mounds district, is drilling below 1,180 feet.

Chaves County

Warman Oil Trust's No. 1 Seibert, NE, Section 27-13-24, Blackdom district, is drilling at 1,750 feet in lime.

San Miguel County

Cibola Petroleum Co.'s No. 1 Crow, NW SE. Section 9-13-14, Ribera district, is drilling at 740 feet, and Tex Austin and others' No. 1 Austin, SE NW NW, Section 16-15-12, will be saved as a 500-bbl. water well. It was drilled to 1,865 feet and plugged back to 1.250 feet. Star Oil Co.'s No. 3 Adams, NE cor., Section 25-17-17, is bottomed at 3,270 feet in red shale and straightreaming to run 6⅝-inch, and Pioneer Oil Co.'s No. 1 Montezuma, SE cor. NW, Section 14-15-16, is shut down for tools at 2,340 feet in red lime.

Otero County

E. H. Ernest and others' No. 1 Ernest, SE cor., Section 20-25-7e, Hueco district, is shut down at 1,004 feet waiting for tools.

San Juan County

Murchison Oil Co.'s No. 3, SW cor. NW, Section 14-28-11. which was reported last June as coming is as a gas well in the Picture Cliff formation, has been completed at a total depth of 1,750 feet with a flow of 200,000 feet of gas from sand at 1,600-1,745 feet. Same company's No. 4 Angel Peak, NW SW SE, Section 11-28-11, 4 feet in the sand topped at 1,786 feet, was reported making 2,000,000 feet of gas, and its No. 5 Angel Peak is on top of the Picture Cliff at around 1,800 feet and waiting for cable tools to drill in. Kutz Cannon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, is bottomed at 2,012 feet and cleaning out 100 feet off bottom. It had a good show of gas in the top of the Picture Cliff which was killed to run 6¼-inch. Continental Oil Co.'s No. 24, SW cor. NW, Section 1-29-19, Rattlesnake, is bottomed at 3,852 feet and cementing cave.

McKinley County

The Craven interests of Los Angeles are reported to have acquired the holdings of the Walker Dome Oil Co., consisting of 2,520 acres, including No. 2, SE cor. NE, Section 14-15n-10w. This well at 1,014 feet was reported to have 350 feet of high gravity oil standing in it last July. The holdings will be turned over to the Marathon Oil & Refining Co., organized by the Cravens interests, in connection with plans to build a 3-inch line from the Seven Lakes district to Baca Station, on the Atchison, Topeka & Santa Fe, where it proposes to build a small refinery.

Torrance County

J. B. Witt Oil & Gas Co.'s No. 1 Kutchin, NE SE SW, Section 12-7n-7e, McIntosh district, is bottomed at 1,375 feet in sand and reported to be making 100,000 feet of noninflammable gas.

COLORADO

Snowstorms and cold weather retarded drilling operations to a considerable extent in Colorado and all the wells in the southwestern part of the State were reported idle. Mountain Fuel Supply Co. suspended drilling on its No. 2 State, NE, Tract 37-12n-100, on the Hiawatha Dome in Moffat County, at 815 feet for the winter. That company also has shut down all its operations in the same district across the line in Wyoming.

Weld County

Platte Valley Petroleum Co. is gradually clearing up its situation in the Greasewood district where it brought in the discovery well on October 10 in its No. 1 Patterson, NE SE NW, Section 24-6n-61, and is making some progress in its plans looking to the development of the field, but these have not yet reached the stage where the program can be announced.

No change has taken place at the well which is producing between 125 and 150 bbls. daily from shale above the Muddy sand at a total depth of 6,667 feet. This comes from the well in five to six heads per day. Equipment for drilling in the well and completing it has been shipped and this will be installed at once, but no day has been named for the resumption of operations. The storage in the field consisting of one 5,000-bbl. and two 500-bbl. tanks is empty and ready to receive the oil when the well is drilled in. The production is being moved by truck to Orchard where the Continental Oil Co. is buying it on board cars under a temporary arrangement and shipping it to its Denver tank farm.

The lease play is extending out from the Greasewood well into adjoining counties, some leases being reported taken in Logan County in Townships 8 and 7 north, Range 53 west, to the east of the Willard structure which was drilled in 1927 by the Northeastern Colorado Oil Co., this well being in the SW cor., Section 36-8-55. It was abandoned at 5,612 feet after testing the Lakota, or lower member of the Dakota series. Some blocking also is being done on the Stoneham structure in Weld County where the Platte Valley company started a well in 1928 in the SE NW, Section 5-8-56, but drilled only a few hundred feet deep. The Pawnee structure in Township 9 north, Range 56 west, also is receiving some attention. The major play, however, is the west, northwest and southeast of the Greasewood discovery.

Morgan County

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, Fort Morgan anticline, is reported running 6¼-inch casing at 3,670 feet. The 8¼-inch was frozen at this depth and efforts to establish circulation are said to have been unsuccessful.

Larimer County

Continental Oil Co.'s No. 3 Scott, SW SE, Section 6-9n-68, Wellington Dome, is drilling below the Lakota at 4,641 feet and carrying 4¾-inch at 4,632 feet. The Standard Oil Co. of Colorado's No. 1 Hertha, NW cor., Section 21-4n-69, Berthoud Dome, is preparing to resume at 2,890 feet after being idle the past week. This well was temporarily completed as a gas well at 2,810 feet last year and is to be deepened to the Muddy.

Routt County

The Texas Production Co.'s No. 4 Carstarphen, NW NW, Section 5-6n-86, Tow Creek, is held up at 3,278 feet thawing out water lines.

Moffat County

Midwest Refining Co.'s No. 24 Hannewalt, NE SE SE, Section 4-6n-92, Bell Rock, is being completed at 3,040 feet in the lower Mesa Verde. It gauged 35,000,000 feet of gas in 24 hours with a pressure of 1,020 pounds. This well did not reach its objective, the Morapas sandstone, on account of being unable to recover lost tools. It is expected another well will be drilled in the spring. The Texas Production Co.'s No. 4 Wick, NW NW, Section 10-4n-91, Moffat Dome, is rigging up cable tools at 4,646 feet on top of the Sundance.

Montrose County

Uncompahgre Oil & Gas Co.'s No. 1 Colorado Title & Trust, SE SW NW, Section 27-50n-10, is preparing to resume. R. E. Wear and John Vanderpool of that company are reported to have arranged with Oklahoma parties to bring in a crew and try to make a water shutoff and test the show of oil. This well had a good show in the upper Sundance at 1,982-92 feet, but water is coming in from a sand at 1,830-1,957 feet. If this cannot be done, it is planned to drill another well half a mile to the southwest.

WYOMING

Park County

A reported discovery in the Resolute Oil Co.'s No. 1, NE SW NE, Section 17-57-101, on the Badger Basin structure in Park County, Wyoming, is attracting considerable attention and involves some interesting facts. This well, which is 11 miles west of the Elk Basin Field, 7 miles south of the Montana boundary and 20 miles south of the Ohio Oil Co.'s recent discovery on the Dry Creek structure in Montana, is said to be the deepest hole ever drilled in the Rocky Mountain area. Furthermore, it is the greatest depth at which the Wall Creek, or Frontier, has been found. Reports from sources close to the company are that at 8,250 feet the hole began to show some gas in the top of the Frontier. A control head was then installed and drilling resumed. Only a few feet additional depth was made when the well shot light oil over the top of the derrick, blew the tools up the hole and was partly bridged by the bit becoming entangled with the cable. The well then was shut in to await the arrival of a string of 6⅝-inch heavy duty casing. Some of the scout reports were not quite so optimistic, being to the effect that at a total depth of 8,255 feet the tools were stuck and that the well was making between 1,000,000 and 1,250,000 feet of gas per day, but no oil.

The Resolute Oil Co. is composed mostly of Great Falls, Mont., people and is headed by Julius Peters, president. E. M. Larson is vice president; A. W. Strain, secretary, and W. R. Strain, treasurer. The well was spotted by C. T. Lupton, consulting geologist of Denver, and George S. Kearney of Great Falls. Drilling began in the summer of 1928 in a 24-inch hole. The company has approximately 20,000 acres, all of which is either government land or owned by the Northern Pacific Railroad. The structure has a known closure of 700 feet and probably 7,000 acres inside of the mapped closing contour. One of the remarkable features of the discovery is the revelation of the rapid dips in the formation which proved to be thicker than expected. The Wall Creek and lower formations down to the Madison lime outcrop at Pryor Mountain to the east. Twenty-two miles easst of Badger Basin, on the Frannie Dome, the Wall Creek, or Frontier, is at the surface. Eleven miles to the east, in the Elk Basin Field, the Frontier is found at around 1,200 feet. At Badger Basin, it was found at 8,250 feet. In other words, there is a dip of 8,250 feet in only 22 miles. The structure is in the Big Horn Basin and is a

basinal dome. The basin is supposed to be much deeper at some other point to the south or southeast, and in spite of the great depth to the Frontier, Mr. Lupton, who recommended the drilling of the structure, expresses the opinion that it may have a very large drainage area. The Frontier dips in 22 miles from approximately 4,400 feet above sea level to 3,850 feet below sea level. Other operations in Park County include the following:

Park County

Midwest Refining Co.'s No. 31 Rosenberg, SW cor. SE, Section 24-58-98, Frannie Dome, is bottomed in pink shale at 2,815 feet and underreaming 8⅝-inch at 2,809 feet. Continental Oil Co.'s No. 27 Elk-2, NE NE, Section 24-58-100, Elk Basin, is bottomed at 1,497 feet in sand and repairing rig damaged by fire. It will probably be completed as a producer at this depth. The Texas Production Co.'s No. 2 Sonners, C SW SW, Section 20-51-100, Oregon Basin, cemented 6⅝-inch on top of the Embar at 3,657 feet and is waiting. California Exploration Co.'s No. 2, NW NE, Section 14-48-102, Pitchfork structure, the discovery well, is running tubing to put on production after shooting. Total depth is 3,903 feet and 6¼-inch is at 3,340 feet. It pumped 280 bbls. a day before being shot. The oil is a heavy black crude.

Hot Springs County

Midwest Refining Co.'s No. 8 Weeks, SE NW SE, Section 6-44-98, Wagonhound structure, is being abandoned at a total depth of 4,520 feet. It was still in the Embar formation when a bad fishing job developed. The chances for production were not very encouraging and it was decided to quit. It topped the Chugwater at 2,885 feet and had a show of free oil at 3,060-90 feet. It had another good show of oil at 3,635 feet, but had hot sulphur water at 4,330 feet.

Fremont County

Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, on the Pilot Butte Dome, was completed at 3,365 feet after plugging back to the gas in the Muddy sand from a total depth of 4,635 feet. A gauge showed an open flow of better than 80,000,000 feet in 24 hours. Before being officially measured, the flow went as high as 100,000,000 feet. The well has been shut in. The Kinney-Coastal company controls practically all the acreage on the structure. The Argo Oil Co. has an interest in some of the acreage which was taken under option at the time the test was started. The discovery opens a new and important gas field in Fremont County and is so situated it will tie in nicely with existing and projected gas developments to the east and the north, and, while the company has negotiated with several interests, it is understood no deal has been closed for the marketing of the output. The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, cemented the whipstock at 4,170 feet. Total depth is 4,485 feet. It has been held up at this depth for several months with casing trouble and a change to company tools was made last week. The Texas Company's No. 1 Government, SE NW, Section 1-33-95, the discovery well, which was completed in 1928 at 4,175 feet after plugging back from 4,240 feet, is cleaning out 120 feet off bottom and the gas is increasing. This well flowed as high as 600 bbls. of oil in the shale above the Muddy and had gas in the Dakota. Producers & Refiners Corp.'s No. 10, NW cor., Section 14-32-95, Big Sand Draw, is coring in dark shale at 3,742 feet and is reamed to 3,730 feet, and its No. 2, SE NW, Section 33-34-92, Muskrat Dome, is shut down at 4,785 feet on account of frozen water lines. The Lander Corp. is reported to have interested Chicago and Missouri capital and to be planning another test on the Bartram Gap structure. Its No. 1, NW NE, Section 35-33-99, was drilled to around 1,000 feet.

Sweetwater County

Mountain Fuel Supply Co.'s No. 1 Cappers, SW NE, Section 2-19-104, North Baxter Basin, shut down for the winter at 3,275 feet. This was the last of the company's operations in that district to close down.

Lincoln County

Wyoming Production Co.'s No. 1 Neill, SE NW, Section 14-24-113, Fontenelle structure, is shut down at 1,050 feet with 12½-inch at 820 feet.

Uinta County

Park City Oil & Gas Co.'s No. 1 Christensen, NE cor., Section 6-15-113, Lyman district, set 6¼-inch at 2,150 feet for a water shutoff.

Natrona County

Midwest Refining Co. has made a location for its second well on the Midway Dome in the C SE SE, Section 14-25-79, one-fourth a mile north of No. 11 Middy, the discovery well, and is moving in. This will be for its joint account with the Salt Creek Producers, Mountain Producers and Midway-Geary Syndicate. The discovery well has produced 16,000 bbls. up to this time. Same company's No. 11, SE NW NW, Section 32-34-77, Geary Dome, is drilling below 3,720 feet, having made this depth in 11 days' drilling after the well was turned over to the contractors. This is one of the three tests on the three structures in that area to be drilled under a group development plan approved by the Department of the Interior. At the present rate of progress, it probably will be completed before the end of the year. Midwest Oil Co.'s No. 29-SD-3, NW NE, Section 26-40-79, Salt Creek, is drilling at 1,618 feet in hard black shale, and its No. 8-SD-3, SE, Section 26-40-79, is bottomed at 2,977 feet on top of the third Sundance and preparing to run the 8⅝-inch.

Carbon County

Midwest Refining Co.'s No. 27 Union Pacific, SE SE, Section 11-20-81, Elk Mountain, is drilling at 1,080 feet in gray shale, and Producers & Refiners' No. 3, SE NW, Section 2-19-88, Hatfield, is drilling at 4,352 feet in hard gray shale.

Converse County

Ohio Oil Co.'s No. 5 Jones, Section 9-33-76, Big Muddy, is drilling at 3,440 feet.

Niobrara County

A refinery test made recently on the oil found in the Ohio Oil Co.'s No. 4 Converse Sheep, SW SE, Section 32-36-65, Lance Creek Field, showed a specific gravity of 42 degrees as against 36 degrees in earlier tests. This well found the oil in the upper Sundance at a total depth of 3,731 feet, this being the first well drilled to that horizon. It went 13 feet into the Sundance. Since the big production in that formation in Salt Creek comes from the third bench, or lower Sundance, this discovery upon being further developed may, in effect, open an important light oil field in the new horizon. The Ohio company reported the first completion in that horizon as a 600-bbl. well. Argo Oil Co.'s No. 2 Ford, SW SE, Section 33-36-65, Lance Creek, has recovered lost tools and is preparing to resume at 3,346 feet. It will be carried only to the second Dakota sand at this time to increase the supply of gas for the Huber company.

MONTANA

Citizens of Belgrade, Gallatin County, in south central Montana have long argued that an oil structure is located near the city. Recently an oil firm secured leases and a deep drilling outfit has been placed on location.

In the Sunburst Field, the Vander Pas Co. completed a new producer, No. 4 on Section 27-35-1, which looks like a small pumper.

The Texas Production Co. well in the Pondera Field on the Copley lease found the pay and looks like a 50-bbl. producer. In the Border Field only one well is working on the American side, the Monalta Oil Co.'s No. 2 Buckley, which is setting casing on top of the sand, preparatory to drilling in. Two wells are drilling on the Canadian side.

In the Cut Bank Field, Glacier County, the Texas Production Co. has a gas well estimated at 10,000,000 feet about 10 miles north of Cut Bank town and the work is continuing to put the hole all the way through the sand. The Fulton well north of Browning, in Glacier County, has been shut down due to storm conditions.

Rocky Mountain Production

Average daily runs from fields week ending November 29:

WYOMING	
Salt Creek	26,590
Big Muddy	2,030
Grass Creek	2,030
Elk Basin	720
Dallas	280
Frannie	980
Hudson	220
Lovell	10
Teapot	20
Warm Springs	100
Rock River	2,140
Lance Creek	160
LaBarge	1,460
Poison Spider	390
Oregon Basin	3,110
Osage	1,000
Ferris	10
Byron	10
Lost Soldier	4,400
Simpson Ridge	50
Dutton Creek	50
Total Wyoming	45,760
MONTANA	
Cat Creek	1,130
Lake Basin	50
Kevin-Sunburst	3,570
Pondera	1,700
Border	540
Total Montana	6,990
COLORADO	
Florence	544
Moffat	1,142
Fort Collins	1,146
Iles Dome	943
Rangley	50
Tow Creek	357
Boulder	25
Total Colorado	4,207
NEW MEXICO	
Rattlesnake	1,315
Hogback	440
Table Mesa	75
Artesia	717
Cap Rock	288
Getty	167
Hobbs	37,047
Jal	1,353
Lea	2,912
Eunice	1,811
Texas Pacific area	260
Total New Mexico	46,385
Total Rocky Mountain	103,342
Total previous week	102,021
Difference	1,321

MANY WAYS TO STOP TANK TRUCK LOSSES

(Continued from Page 32)

ter how large it may be or how complex a job its operations involves, is simply a means to the end of maintaining rapid, efficient and profitable movement of products to the retailer. In a very important sense, therefore, it may be said that the first test of sound management in the distribution of petroleum products is the effectiveness of delivery management.

Three Vital Questions

Three vital questions every truck operator should ask daily are these:

1. Are my trucks being operated to get maximum use of the minutes in each working day?

2. Are my trucks getting a maximum of work accomplished each minute that they work?

3. Are my trucks moving profitable loads a maximum part of the time?

Better truck management means a better answer to these three questions.

The distributor of petroleum products who has his eye on greater profits will do well to study his entire business operation from the one vital angle of deliveries. Delivery of petroleum products cannot be set on an economical and profitable basis unless every other phase of the distributor's business is keyed to the important task of moving products both efficiently and economically.

Handling of the distribution of petroleum products from this viewpoint must of necessity be based on sound truck transportation. The truck is the distributor's tool for the movement of goods to the retailer. Simply buying trucks, manning them with drivers, and putting them to work as they seem to be needed, does not assure sound use or profitable use of this tool of distribution. Correct truck operation is based on strict fundamental rules. When those rules are observed, distribution costs will be held at a low level and the distributor's profits will be correspondingly high. Cost records, sale records, delivery records, and other devices for controlling the cost of distribution are simply score boards or meters which register the degree to which sound operating practice is being followed.

It is well, therefore, that the distributor of petroleum products have clearly in mind at all times these fundamentals of profitable truck operation. Briefly stated, they are as follows:

1. A truck is operating most profitably when it is at work a maximum number of minutes out of each working day.

2. A truck is operating most profitably when its own speed and stamina plus sound management enable it to produce a maximum amount of work each hour it is operated.

3. A truck is operated most profitably when the work assigned to it (or its load) does not come under or exceed the exact limits for which the truck was designed.

Failure to Observe These Rules Costly

These three simple rules, although they may seem obvious, are the basis on which every truck operation should be built. Failure to observe them is costly. Strict observance of them, on the other hand, is profitable. And to a degree that each distributor follows these fundamental rules, his cost of distribution will be lowered and his profits will increase.

In actual practice, close observance of these three rules on the part of the petroleum products distributor calls for three types of improved management, namely, better management of truck time, better planning of sales and deliveries, better planning of truck buying.

The distributor of petroleum products who desires to lower his delivery costs will do well to apply the basic rules of sound truck transportation to the management and operation of his present trucks as the first step toward more economical and profitable operation. And since profitable operation of trucks depends to a great extent on profitable use of time, it is well to start with a careful time analysis of present truck schedules.

A truck that is idle or loafing on the job is not producing profits. To be sure, a truck which is standing idle is not running up operating expense, but the fixed costs of operating the truck are still present. Investment cost, insurance, taxes, garage rent and licenses are always present whether or not the truck is in operation. Moreover, a careful study of idle truck time will usually show that the driver is idle or loafing when his truck is idle.

Based on typical figures for a 3½-ton tank truck, the fixed expenses of operation for one year are as follows:

Depreciation (25% each year)	$1,080.00
Interest on investment	210.00
Garage rent	120.00
Property tax	11.00
Licenses	105.00
Insurance	212.00
Total fixed costs	$1,738.00
Fixed costs per day (300 working days	$5.79
Driver's wages per day	5.50
Fixed cost plus wages (per day).	$11.29
Cost per hour of idle time on basis of 10-hour day	$1.13

Fixed Expenses Must Be Watched

It is these fixed expenses of truck operation which must be watched if deliveries are to be handled profitably. If we assume that the driver is idle when his truck is idle—as he is in most instances except when the truck is in the shop for major repairs—these fixed expenses make up 80 to 90 per cent of the total operating cost of each truck. Repairs, maintenance, fuel and oil—the running expenses incurred only when the truck is in operation—seldom exceed 15 per cent of the total cost of operation.

Looking at the value of time from this angle, idle time and delays in a fleet of trucks can mount up to staggering losses over a very short period of time. For example, the accompanying table shows the time record during January, February and March of 1930, for a fleet of trucks operated by an oil distributor in the Middle West. The result is astounding. Thirty-four per cent of the available working time for the fleet was lost during these three months. And yet this distributor's

operation is fairly typical of that of many other distributors throughout the country.

Study of these time losses, both for this distributor and for many others, indicates that they arise at three distinct sources: (1) In the repair shop, (2) at the bulk station, or (3) on the route.

TYPICAL TIME STUDY
(Covering three months)

Truck No.	Total hours operated	Hours of idle time	Per cent of idle time
1	429	196	46
2	527	88	17
3	468	158	34
4	407	123	30
5	458	174	38
6	539	103	19
7	320	285	89
8	512	121	24
Fleet	3,660	1,248	34

Of the 34 per cent of idle time in the fleet analyzed in the table, 9 per cent—or more than one-quarter—was lost in the repair shop. Time lost in the repair shop usually is the most costly of all losses in truck operation. Excessive need for repairs disrupts service; in many fleets, excessive repairs demand surplus equipment to handle the work of regular equipment laid up in the shop; the truck in the shop is piling up costly time; and parts and labor are contributing their share.

And yet relatively few of the many operators contacted during this survey were found to be making a systematic and thorough effort to reduce these losses. To be sure, almost every distributor is making some attempts—usually more or less haphazard—to cut down the need for repairs. But few operators are working for improvement in the two phases of management which largely determine repair expense, namely, training of drivers and effective maintenance.

Training Reduces Repair Losses

Every man who owns and operates trucks knows that the economy of his truck operation is vitally dependent on his drivers. Many operators, however, are content simply to hire drivers, put them to work with a few minutes or hours of instruction, and then periodically jerk them up when their work shows shortcomings. The trouble with that procedure is that the damage is done before the driver is taught to avoid it. It is like shoeing a horse after it has gone lame.

Drivers are successful and economical in direct proportion to two factors: (1) Their knowledge of what to do and what not to do; (2) their interest in handling their job correctly. Systematic effort to reduce losses arising from the fault of the driver, therefore, should include thorough and continuous driver training and a bonus system to stimulate good work.

There are many types of training programs for drivers and many bonus systems in use. Each of these has its merits and many of them have shortcomings. Drivers' wages are 40 to 55 per cent of the cost of operating the average truck. Getting dividends on that investment should be the delivery executive's first concern.

A large refiner in the East puts each new driver through a school covering these subjects:

1. Filling out forms and reports; handling cash and credit sales.
2. Maintaining cordial relations with customers.
3. Routing for time and mileage savings.
4. Loading, unloading and running without hazard to the load.
5. Driving to save the truck.
6. Preventing accidents; meeting accident situations correctly; reporting accidents.
7. Maintaining the truck properly.
8. Observing traffic rules and regulations.
9. Preventing personal injuries.
10. Disposing of surplus loads.

Bulletins covering some one of these 10 subjects are mailed to drivers' homes weekly, to stimulate better work. A bound volume of past bulletins forms the basis for training new men.

Simple Bonus Plan

The simplest and most air-tight bonus plan found consists of a flat bonus of $15 a month for good performance. Deductions are made according to this schedule:

$2.50—Accidents caused by the driver.
2.00—Proven shortage in delivery.
2.00—Violation of safety rules.
1.00—Repairs due to poor driving.
1.00—Spillage at the bulk plant.
1.00—Spillage at point of delivery.
.50—Other customer complaints.
.50—Proven loafing on the job.
.50—Failure to report needed repairs.
.20 to $1.00—Average returns in excess of 8 per cent of loads.

A systematic maintenance program, carried out with unfailing regularity, is the best possible insurance against excessive repair expense. The petroleum industry in all its branches has taught customers that idea for many years. Yet a careful check of maintenance practices among truck operators in the industry shows a surprising amount of laxity in this important part of truck operation.

The most widely accepted practice among distributors is to require drivers to maintain their own trucks, a simple, practical system. But present maintenance practice under this system reveals four important drawbacks:

In many cases it was found that the driver had little or no definite knowledge of the complete requirements of effective maintenance. As a result, his efforts were confined to an occasional oil change, an occasional greasing at known points of need, and utter neglect of other important maintenance items until evidence of excessive wear forced them on the driver's attention.

In other cases drivers were given no definite maintenance schedules to follow, and important maintenance duties were neglected over dangerously long periods. During peak seasons, especially, drivers were found to neglect schedules.

Again, it was found that the driver's work was seldom checked and corrected. Lack of a check-up on the driver's work tends to breed carelessness and neglect, which in turn create excessive repair cost.

In almost every operation studied, where maintenance was handled by drivers, valuable working time was sacrificed in order to take care of maintenance work. Maintenance work at overtime rates hardly pays. But it must also be remembered that loss of normal working time reduces profits on truck operation.

Each Defect Contributes Its Share

Each of these common defects contributes its share to excessive repair costs when maintenance is handled by drivers. That does not mean, however, that driver maintenance is impractical and bound to be costly. In a great many instances, especially among large fleet owners, the most practical and economical method of handling maintenance is to assign one man to that task in the distributor's own garage or shop, handling it outside of normal working hours whenever practical. But whether maintenance is handled by drivers or by special maintenance men, it will pay every operator of trucks to set up more effective control of his maintenance from these five angles:

1. More exacting demand for careful daily truck reports from drivers.
2. More complete and thorough performance of maintenance tasks.
3. More careful observance of definite time and mileage schedules.
4. More effective checking to see that maintenance tasks are carried out.
5. More systematic effort to schedule maintenance for hours during which the truck might otherwise be idle.

The larger the number of trucks operated, the greater the need for careful supervision of maintenance. Time spent in the repair shop is the most costly of all time losses. Reduction of those losses demands better maintenance practice.

CHECK SHEET FOR MAINTENANCE PRACTICE

Check each item listed below, in the proper column, taking care to check the "Yes" column only when you know the item is definitely taken care of in your present maintenance practice. When you have completed your check-up, make an immediate study and revision of your present practice to eliminate weaknesses. Each operator should add to this chart whatever points he has found important, and then use the chart periodically to check himself on maintenance practice.

Check completeness, thoroughness, and scheduling on these points—	Yes	No
Are individuals in charge of maintenance required to read and know the manufacturer's service guide for the truck or trucks they handle?	....	....
Are they given definite schedules for maintenance operations?	....	....
1. Are drivers required to report the condition of trucks fully each day?	....	....
2. Is there careful supervision to see that minor repair needs are reported promptly and taken care of immediately?	....	....
3. Are mileage or time schedules for maintenance carefully and systematically recorded so that schedules are kept on each truck?	....	....
4. If drivers handle maintenance, is their work carefully checked at frequent intervals?	....	....
5. Are schedules arranged whenever possible to provide for maintenance during hours when the trucks would otherwise be idle?	....	....
6. Are suitable tools for maintenance, and all necessary materials, always available?	....	....
7. Is tire inflation checked and corrected each day?	....	....
8. Is crankcase oil changed at regular intervals as specified in the service manual?	....	....
9. Is greasing and oiling for all parts handled at regular intervals as specified?	....	....
10. Are batteries inspected at frequent, regular intervals?	....	....
11. Are trucks washed at frequent intervals?	....	....
Is thorough mechanical inspection at regular intervals provided for?	....	....
1. Is tank equipment inspected daily for safety purposes?	....	....
2. Are brakes, steering gear, and engine inspected and tested at least every 1,000 miles?	....	....
3. Are trucks brought in for more complete inspection at regular mileage intervals as specified by the manufacturer?	....	....
Does this inspection call for the mechanic to cover the following items?	....	....

To check—	Yes	No
Engine for idling	....	....
Engine bolts, mounting	....	....
Bearings for sound	....	....
Radiator	....	....
Breaker points	....	....
Spark plugs	....	....
Valve tappets	....	....
Generator brushes	....	....
Compression	....	....
Fuel system	....	....
Fan and water pump	....	....
Magneto bearings	....	....
Generator bearings	....	....
Battery charge	....	....
Terminals and wiring	....	....
Steering gear	....	....
Fuses, lights, signals	....	....
Dash instruments	....	....
Speedometer cable	....	....

To check—	Yes	No
Drive shaft, rear axle	....	....
Universal joints	....	....
Front wheel spindles	....	....
Body and fenders	....	....
Springs	....	....
To test and correct—		
Brakes—adjust or reline	....	....
Oil and grease leaks	....	....
Cab comfort	....	....
Ground chain, tank valves	....	....
Oil feed	....	....
Action of engine	....	....
Action of clutch	....	....
Front wheel action	....	....
Tire tread and wear	....	....
Tanks physical condition	....	....
Tanks, sediment, etc.	....	....
Regular maintenance	....	....

Do mechanics have an inspection sheet or card listing these items for their guidance, and for O.K. during inspection?	....	....
Are the men in charge of this inspection thoroughly competent and reliable?	....	....
Are rewards offered for effective maintenance or penalties given for neglect?	....	....

TUBING IS IMPROVING PRODUCING CONDITIONS

(Continued from Page 33)

ing and casing. This flow of gas materially assists producing the well.

The pump is using about 56 kilowatt of electric power per hour and the cost of power only is approximately $14 per day. With the gas lift it is estimated that the cost was about 20 cents per barrel. The cost on pump operation does not include rental and royalty charges for it is understood that the pump is not sold outright but rented upon a royalty and cost of upkeep basis.

It has been noted that when the pump is operated at a high speed for a time and the rate of discharge from the well is built up to a maximum, the well will then flow naturally for a few hours through both tubing and casing.

Description of Pump

The pump is the 5⅛-inch size with 49 stages and equipped with a 70 horsepower motor wound for 440 volt, three phase alternating current, and the units run at about 3,600 r.p.m. at full speed. The pump weighs 600 pounds and the motor 1,300 pounds. The electric cable weighs 2 pounds per foot and is clamped to the tubing at every joint.

When the well was produced under gas lift practice the working pressure of the input gas was about 300 pounds per square inch at the well head.

It has been noted that the fluid from this well has a temperature of about 110° F. whereas temperatures of fluids from other limestone wells is about 108° F. These temperature readings were not taken with a view of making comparisons and are given only as approximations, but it is thought that the fluid from this well when pumped is a trifle higher than it was then when produced by gas lift.

No emulsion was made with the Reda pump during all of the first part of its operating period but about November 20 it was noted that the fluid was cut about 1½ per cent. This cut oil coincided with a drop in atmospheric temperature and this might have played some part in making the emulsion. It was not difficult to separate the oil and water by heat treatment in the usual type lease treating tank.

The gravity of this oil is 36.28° A.P.I. standard at 60° F. and the water produced with it has a gravity of 1.14.

While this pump test has not been concluded no mechanical troubles have developed in the unit and its use in wells of this type will depend largely on operating costs, especially in view of the recent cuts in crude prices.

Tubing Wells Gaining Favor

In a general review of the conditions throughout the field it would seem that there is a tendency on the part of the production engineers to view with favor the tubing of wells in both the lime and sand areas, especially to take care of the new conditions that will arise after January 1, 1931, when it is understood the production of the pool will be placed upon a percentage, rather than a time basis.

There are approximately 14 wells now tubed with strings to the bottom of the holes and provided with bottom hole chokes, and they have all showed an improvement in production, some now flowing whereas before they were tubed they were dead.

The range of pressures encountered in these wells varied from 2,000 pounds per square inch down to 600 pounds. Below 600 pounds pressure the wells would not flow and could therefore be tubed by the regular methods, but in those wells where the pressures exceeded 600 pounds it was found best to use the Otis system of running tubing.

The strings run by this method have been either all 3 or all 4-inch sizes and approximately 6,000 feet in length. Chokes from three-quarter to 1½-inch sizes have been installed in the strings after running. In some wells it is necessary to experiment with chokes to determine the size opening giving the best results, but with the data now being accumulated it is becoming possible to decide the size opening best suited to the well without testing.

Tubing wells has reduced the proportion of water to oil as much as 30 per cent, and in no case has the reduction been less than 10 per cent of the original water produced by the well. Some wells have produced several thousand barrels of water with but little oil, and it is in such places that the advantages of tubing is making itself most noticeable.

Reduce Water From Formations

When the field is put on percentage production, instead of time flowing as now practiced, the tubing of all wells will be an advantage, for it will permit the operators to cut down the gas-oil ratio, and where the wells make water it will

also reduce the quantity by holding back pressure on the formations. This has been demonstrated in wells already tubed and while most of them are in the limestone area, it seems quite definitely proven that the water in both lime and sand formations is under the same hydrostatic pressure and is connected across the field. It is therefore only reasonable to assume that tubing will also help sand wells.

Water analyses from all parts of the field show very little difference in the character of the water from either lime or sand formation, and in one instance at least it seems that water has already cut across from the lime into sand wells producing from the lower Simpson formation close to the edge of the Arbuckle structure.

This condition has not been definitely established yet, but it does seem as though water that has recently shown up in these sand wells in the lower Simpson is coming across from other wells up structure in the lime where the wells were drilled early in the development of the field and cased rather high.

The character of waters from every section of the field has been determined, and it does seem safe to state that it is all from the same source. This theory is strengthened by the fact that wells have lost their bottom hole pressures and have been shut in, have later again built up pressures approximately equal to what it was when the wells were first completed.

This is a very significant thing and will have its influence upon the production of sand wells under the percentage program, for if back pressure is not held on the sands water encroachment may be rapid in them with the lowering of ultimate recovery of oil from those areas flooded with water.

There is some discussion among engineers on the advisability of using perforated liners opposite the sand in some of the wells where a great deal of sand is being produced along with the oil. If these wells are finished with perforated liners and tubing with bottom hole chokes set inside of the liners and the well then produced against relative high back pressure it is thought the maximum amount of oil will be recovered with a minimum gas-oil ratio.

Sand Cutting Serious

One of the major problems now engaging the attention of the production men in the north end of the field is the sand cutting of fittings at the surface. One well is reported to have made 2,000 bbls. of oil between 700 and 800 bbls. of sand in 55 minutes open flow production. This sand was estimated upon the basis of 63 bbls. per foot of tank capacity and it filled 8 feet of the bottom of the tank during this flow with some sand being constantly discharged from the flow tank.

The well was produced through the 7-inch casing, and fitted with three extra heavy type master gates located in the cellar and into a 15½-inch "cushion-head" mounted on the upper end of the 7-inch flow string.

This "cushion-head" is a new development in the Oklahoma City Field and is being made in several types. In principle they are all very much alike, being made from 15½-inch extra heavy casing, "orange-peeled" at top and bottom and drawn to a 7-inch size opening and then welded. Some heads are made in two parts, and the upper and lower portions connected by Victaulic couplings, while others are made with a one-piece body and removable head that is anchored into place on top of the body by bolts, and also held down by turnbuckle rods leading to the four corners of the derrick.

The wells are flowed and shut in as desired by the opening and closing of the master gates below the cushion heads. When open the oil, gas and sand enters the lower part of the head under high velocity and the stream is directed against some form of wearing plate in the top of the head and then carried to the twin oil and gas separators through 12½-inch or other large size pipes.

Experience has shown that the cutting action is very rapid where the sand strikes the metal at an angle, even though this angle be slight, and it is now the desire of the designers so to direct the stream of oil, sand and gas that it will strike directly against the wearing part and produce a cushioning effect due to the sand bouncing back into the oncoming stream and in this way taking part of the shock.

Cutting Action Rapid

It is almost impossible to conceive of the rapidity with which this fine sharp quartz sand will cut through the hardest kind of steel and wear away any exposed surfaces against which it can strike.

It is reported that it has cut a hole through about 1½ inches of steel in 14 minutes, and it is understood this is not the record cutting rate that has been observed in this field.

There is considerable activity at this time in the development of hook-ups for well heads that will handle these heavy flows, and most engineers agree it is most desirable to eliminate all bends or angles from the lines, and increase the diameter of flow connections as rapidly as possible above the upper end of the well flow string. This increase in diameter has the effect of reducing velocity of the current and consequently lowering the rate of cutting.

Companies manufacturing sand blasting equipment have been called upon to assist in the solution of these problems and some of the data submitted by them is most enlightening and has a direct bearing upon the Oklahoma City Field sand cutting conditions.

It has been found in sand blast practice that lead is most abrasive, that is, cuts most rapidly under sand blast conditions, and following this in about the order named is hot rolled steel, cold rolled steel, cast iron and rubber. The rubber liners have been made up of many different rubber compounds and they in themselves offer a number of interesting experiments for they have a wide range of resistance to the cutting action, but all are much slower to yield than any of the metals.

The objection to using rubber as a buffer in the cushion heads is that oil has a very bad effect upon rubber and it will be softened and therefore lose its elastic qualities quickly. It is being tried as a cushion layer between two steel plates, and the stream from the well is directed against the flat surface of the steel with the least possible angle of deflection in its path of flight.

New Type Head Described

In this type of cushion-head the stream from the end of the 7-inch flow string is choked through a short vertical piece of 3-inch pipe set inside the 15½-inch cushion-head. The head is about 10 feet long over all, and this 3-inch pipe is 4 feet long, so the discharge end of the choke is within about 4 feet of the steel target in the upper end of the head. This will tend to prevent the stream of sand from spreading before it strikes the end of the head and its force is therefore partly used in the rebound to slow up the oncoming stream of material.

The next condition that seems desirable is to provide large openings from the cushion-head so that all oil, gas and sand can get away as quickly as possible, and be carried into the oil-gas separators. Velocity of flow of gas from the cushion-head to the separators is great enough to carry all sand out of the head. Twelve and one-half-inch minimum size relief lines are provided between cushion-head and separators and they are usually two in number and are connected into opposite sides of the head.

Where these lines enter the trap a connection is provided that will give the stream a vortex or whirling motion and in this way the oil and sand drops to the bottom of the trap and the gas is discharged through openings in the upper portion of it. The oil is discharged from the separator through valves under control of floats much the same as in the regular type oil-gas separators, and the sand sinks to the bottom of the trap and is discharged through an opening there.

These oil-gas separators are provided with cone type bottoms so that the sand will not pack as it has been found to do when the cone is turned downward. The sides of the cone exceed 45° and the sand therefore slides down it very easily and may be drawn off by a type of stopcocking or by cracking the discharge valve just enough to permit a steady flow of the oil saturated sand from the oil-gas separator.

Flow Tanks Also Used

Some wells are discharged through cushion-heads into separators and then into large receiving tanks where the stream is given a whirling motion which tends to separate oil, gas and sand. The gas is vented off from the top of the tank to the atmosphere, while the oil is collected in an open end cylinder located in the upper part of the tank and from there discharged to the stock tanks, while the sand settles to the bottom of the tank and is drawn off through pipes set around the periphery of the lower side ring of the tank.

The bottoms of these 2,000-bbl. capacity tanks are made cone shaped and at the apex of the cone is placed a water flushing system that will flow water down all sides of the cone and wash the sand to discharge openings. Fresh water is used for this flushing and the discharge valves are manual operated, and the intervals between opening periods are regulated by the lease man who quickly learns the rate at which the well is making sand.

Wells Closely Spaced

In the town lot area in the NW Section 2-11-3, where there is a well to about every 3.64 acres, a number of large Wilcox sand wells are being finished and they present some very serious problems because this sand is cutting away connections at the well heads very quickly and a tiny leak, which on an ordinary well would mean very little, on wells of this kind will develop into a dangerous hole within a very few minutes of flowing time.

Manufacturers of oil-gas separators and tanks are therefore using every effort to provide equipment that will permit wells of this type to be safely brought in and they are making progress as witnessed by the fact that No. 1 King well on the Phillips Petroleum Co. located within the city limits, was brought in last week without any trouble, in fact, the operation was so quiet that most of the 500 or 600 spectators who had gathered to witness the completion of this well knew nothing of what was going on and considered that the show was not worth the effort it took to go to the well, but to the experienced oil man it was an achievement of the highest order and something he will talk about for many days.

These are only a few of the problems confronting the operators in the Oklahoma City area and everything considered it is remarkable how small an amount of actual trouble is being experienced. A few will take chances, but the average operator in this area, whether working for one of the major companies or an independent, is giving a lot of consideration to his problems and solving them in a satisfactory manner, for it is found that means are at hand if they will only use them of controlling wells making upward of 85,000 bbls. of oil per day as well as others producing nearly 180,000,000 feet of gas. When such wells can be brought in safely in a crowded city area it is an achievement to which the industry can point with pride.

Morgan Petroleum Co.'s No. 1 Stout well, with John Gordon, who was in charge of the gang that put these connections into place and brought this well under control after it had been wild for several days. The well is not yet connected to oil and gas separators but that work is under way. Mr. Gordon is now lease foreman for the Morgan Petroleum Co. and has previously assisted in bringing the following wild wells in the Oklahoma City area under control: No. 1 Mary Sudik, No. 1 K. Henning, No. 1 Emerson Joyce and No. 1 Sonora Bodine.

MICHAEL CURTIN DEAD

Michael Curtin, a pioneer oil man who started in the Pit Hole Field in Venango County, Pennsylvania, in 1865, died at his home in Kane, Pa., on November 26. Mr. Curtin was born in Ireland and was 16 years old when he came to America and was attracted to the oil country. He went to work at once and after learning tool dressing and drilling became a drilling contractor, which business he followed thereafter. He is survived by Mrs. Curtin and 10 children, including three sons, Thomas of Kane, Neil of Clarendon, Pa., and Michael of Seminole, Okla., all of whom followed in the footsteps of their father in the oil business.

TEXAS DEEP WELLS SUCCESSFULLY TUBED

(Continued from Page 32)

and after the tubing job was completed the well only made about 1,700 bbls. of oil per day with a gas-oil ratio of about 9,000 cubic feet. This was a reduction of gas-oil ratio from about 11,000 cubic feet made by the well when producing through the casing, and with the reduced volume of oil made a very considerable reduction in the total output of gas from this well.

Second Well Completed

As soon as No. C-2 of the Big Lake Oil Co. was completed the crew of The Southern States Co. moved over to No. B-3 of the Continental Oil Co. and started to run a tapered string of 3 and 4-inch tubing in it. This well has a total depth of 8,633 feet and is cased with 7,995 feet of 7-inch, 30-pound A.P.I. casing which is cemented in place.

The tubing run in this well is tapered, the lower portion being 2,670 feet of 3-inch, 9.3-pound and the top consisting of 5,960 feet of 4-inch, 12.75-pound tubing. This makes a total string of 8,630 feet, or about 3 feet short of the total depth of this hole, and it is therefore assumed that the tubing is hanging free in the casing.

The bottom of this string of tubing consists of one joint about 30 feet long of 3-inch perforated tubing. It has about 200 holes each three-eighth-inch diameter. This perforated joint was snubbed into the well through a 27-foot lubricator, which with the connections on the top of the well gave enough room for handling this first joint, and permitted it being lubricated in. The next 510 feet, or 17 joints of 3-inch tubing, was snubbed into the well under the flowing pressure and when this much pipe was in the hole it was possible to complete the job without further snubbing.

A cast iron plug similar to that used in the Big Lake Oil Co.'s well was placed between the top of the perforated joint and the bottom of the tubing string and it was dropped at 9 a.m., November 30, as this well was tubed in record time.

To remove the bottom hole plug the pressure in tubing and casing was equalized by flowing gas from the casing head into the tubing without the use of water. When the pressure on the gauge at the tubing head began to drop from about 1,600 pounds maximum pressure it indicated that the pressure was equalized between casing and tubing and the plug was dropped and the valve between casing head and top of tubing was closed. The well then produced through the tubing only and it is still flowing in this way.

No. C-4 Well Now Being Tubed

The next well to be worked on was No. C-4 of the Big Lake Oil Co. and because of the small diameter at the bottom of this hole it was necessary to run 2⅞-inch tubing in the bottom 400 feet because it had been necessary to leave about 383 feet of open 4½-inch hole in completing this well. A complete report of the drilling operations on the Big Lake Oil Co.'s wells is given in an article that appeared in The Oil and Gas Journal of April 17, 1930, page 39. This shows that the well is finished with 7,837 feet of 5⅞-inch 20-pound casing cemented in place.

It is proposed to increase the tubing size to 3-inch as soon as the open hole is passed and continue this 3-inch string to the surface.

The bottom joints on this 2⅞-inch string is perforated and the cast iron plug used in the same way as in the other wells.

This work is now progressing rapidly and it is expected that this well will be completed in about one week.

No. B-2 Well in Bad Condition

When No. B-2 of the Continental Oil Co. was examined and it was found that because of the fact that the lower portion of this hole is not cased a rock had lodged in one side of the christmas tree at the top of the well and further work was postponed until rotary tools could be moved in on the rig and the well killed.

This well has a total depth of 8,489 feet and is finished with 9⅝-inch A.P.I. casing to 5,914 feet, so there is about 2,575 feet of open hole. The well was completed in this way because it was anticipated that it might be necessary to drill it deeper than No. B-1, the discovery well of this deep pool, and as large a hole as possible was desired to give the well this anticipated added depth. Developments later proved that this additional depth was not needed but it was not possible to run another string of casing after the well was drilled into the pay sand for it started flowing immediately.

Rocks have been blown out of this well from time to time, coming from the open portion of the hole, and examination of them shows that they are of a flinty nature, and traveling at the high velocity of the gas from this well they would probably make a spark if they struck against a hard metal surface. This will make it necessary to kill the well and equip it with flow head before the tubing can be run into it.

None of these deep wells has ever been entirely shut in but partial shut-in pressures up to about 3,000 pounds have been recorded at the well heads when the valves have been partly closed.

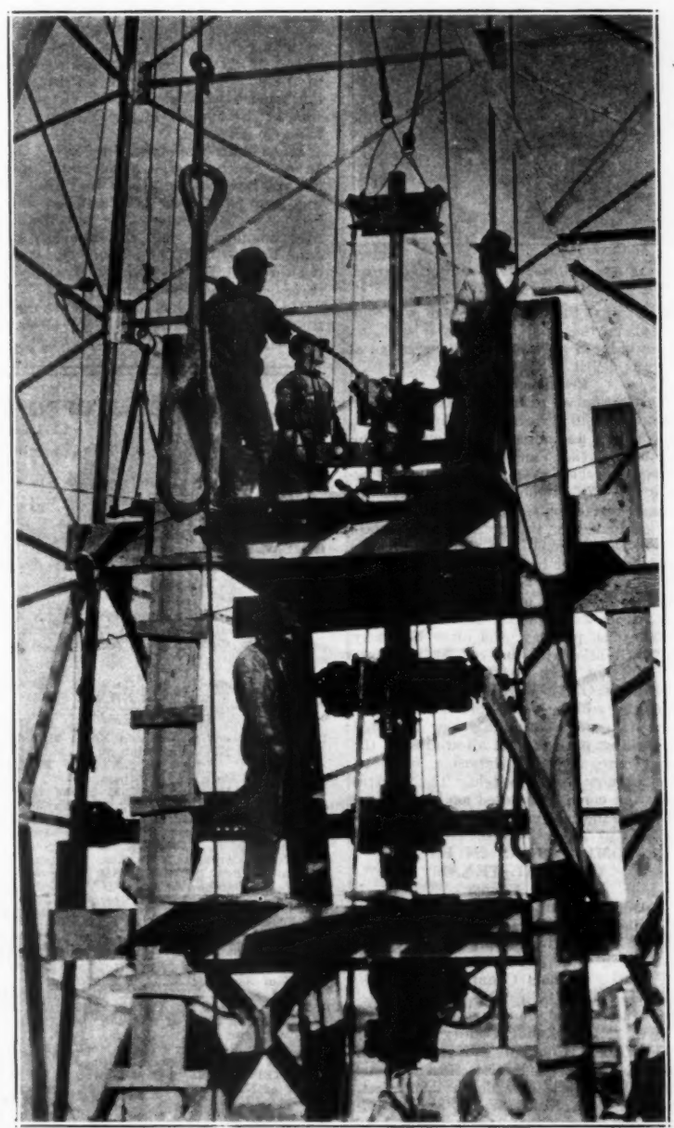
The lower portion of No. B-1 well, Continental Oil Co., the first well to be drilled into the deep pay, also has about 2,349 feet of open hole below the 6,176-foot string of 5⅞-inch casing, the last string to be set in this well. The hole was drilled with cable tools and being in new and unknown formations the deep pay was picked up and began to produce before the well could be finished with another string of casing. It will probably be necessary to kill it also and run a string of 4¼-inch casing to the bottom before tubing.

Tubing Deep Wells Feasible

When the problem of reducing the gas-oil ratio from these deep wells was under discussion one of the main points at issue between engineers was the possibility of running such long strings of tubing into wells of this character and against such pressures without damaging the wells.

The work so far done by the Southern States Co. seems to indicate quite clearly that such wells can be safely handled by the Otis method and the others will be completed just as rapidly as they can be put into condition to receive the tubing.

The two wells now completed have not been produced long enough to give any definite data as to what may be ultimately expected of them in the way of reduced gas-oil ratio, but the results so far show that the amount of oil produced through the tubing will be materially reduced and the gas flow per barrel has been cut about 2,000 cubic feet.



The Southern States Co. tubing crew running string of tubing in No. B-3 well Continental Oil Co., Big Lake Field, Reagan County, Texas, showing Otis equipment used above control head on well.

WEST TEXAS FIELDS

(Continued from Page 69)

with total depth 3,030 feet, with an initial production of 140 bbls., now dry and abandoned.

Scurry County

Northwest Oil Co.'s No. 1 Welborn, completed July 16, 1924, at 3,490 feet, topped pay 3,390 feet, plugged back 3,434 feet, shot 60 quarts 3,380-3,420 feet, plugged back to air at 1,059 feet and using air to pump other wells in field. Northwest Oil Co.'s No. 1-A Welborn, completed June 22, 1926, top pay 3,392 feet, total depth 3,402 feet, now plugged back to air at 1,290 feet, not producing any oil, air is used to pump other wells.

Taylor County

Adams and Ferguson and Hobbs' No. 1 Lane, initial production 500,000 feet of gas from 2,299-2,301 feet, total depth 2,560 feet.

Winkler County

Magnolia Petroleum Co.'s No. 3 Scarborough, top pay 2,861 feet, initial production 101 bbls., total depth 2,876 feet.

Pecos County

Cardinal Oil Co.'s No. 1 J. H. Tippett, dry and abandoned, total depth 452 feet.

Ector County

Gulf Production Co.'s No. 5 University, top pay 3,515 feet, initial production 500 bbls. per day, shot 300 quarts 3,480-3,510 feet, total depth 3,700 feet.

Runs Through Trunk Lines

Company, size and location—	Bbls.
Atlantic 10-inch, Houston	24,983
Gulf 10-inch, Ranger	25,809
Humble 2 and 8-inch, San Angelo	29,156
Humble 10 and 12-inch, Station "A"	23,670
Illinois 2 and 8-inch, Del Rio	36,956
Magnolia 8-inch, De Leon	22,715
Pasotex 8-inch, El Paso	9,789
Shell 10-inch, Healdton	28,816
Shell 10-inch, Houston	32,912
Texas 12-inch, Houston	20,112
Total	254,918

Runs to West Texas Refineries

Amarillo Ref. Co., Pyote	None
Big Spring Ref. Co., Big Spring	1,648
Burford Ref. Co., Pecos	3,036
Blue Bonnet Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	5,403
Col-Tex Ref. Co., Colorado	7,000
Great Western Ref. Co., Big Spring	2,769
Humble Oil & Ref. Co., McCamey	450
Richardson Ref. Co., Big Spring	None
Tonkawa Ref. Co., Pyote	None
Wickett Ref. Co., Wickett	150

Tank Car Shipments

Texas Pacific Coal & Oil Co., from Hurdle	1,545
Fox & Thorsen, from Mertzon	100
Thomas-Brann, from Grant City	None
Reagan County Purchasing Co., from Texon	52
Orient, from Hurdle	55
Southern Crude Oil Pur. Co., from Wickett	18,979
Total	20,722
Total daily average distribution	296,096
Total daily average production (including Lea County, N. M.)	308,375
Daily average to storage	12,279

LANCASTER CO., PENNA. PROMISED THREE TESTS

A press dispatch from Elizabethtown, Lancaster County, Pennsylvania, announces that between 5,000 and 10,000 acres of land in the Conewago Valley, Lancaster County, has been leased for oil and gas purposes by Christ Gingrish, H. H. Heraer and I. A. Risser to A. W. Lewis, said to represent a western oil company, and Berleigh F. Wright and William Ross of Waynesburg, Pa. The news dispatch says three tests will be drilled to a depth of more than 3,000 feet, possibly to 5,000 feet. The land is not over 75 miles west and north of the city of Philadelphia.

DEATH OF MRS. J. E. HASKELL

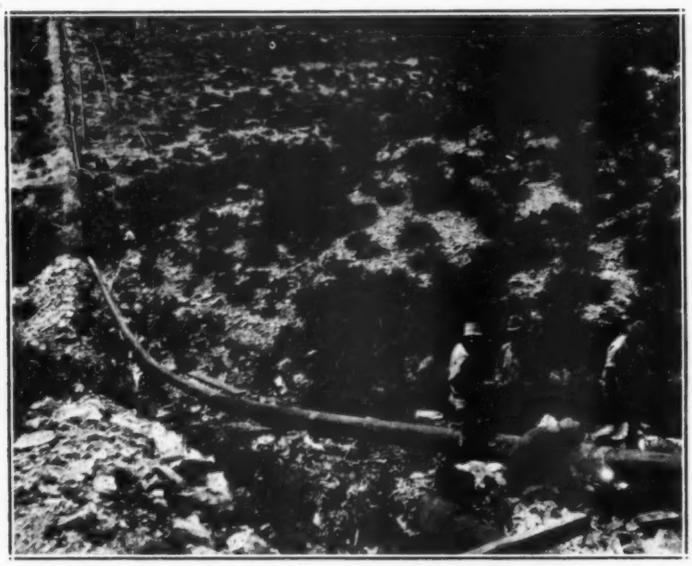
Mrs. Judson E. Haskell died at the home of her daughter, Mrs. E. O. Bartlett, of Tulsa on November 26. The funeral was held in Waterford, Pa. Deceased was a mother of Mrs. Bartlett, Mrs. Herbert R. Straight and Fred Haskell of Bartlesville, Okla., and Mrs. William M. Parkin of Pittsburgh. Judson E. Haskell, who preceded his wife in death, was a widely known oil man in the eastern fields and in the years in which crude oil was bought and sold on oil exchanges was one of the largest traders on the floor of the Bradford Oil Exchange.

PIPE LINES BIG AID TO SOUTHWEST TEXAS

(Continued from Page 76)

work, thereby making welded lines out of these which were primarily screw lines. Much reconditioning work is now being done by electric arc-welding. In reconditioning work a patch of weld is made the same thickness as the pipe, giving the pipe its original strength at that point.

Arc welding is also said to be cheaper than saddle clamps which are often used in stopping leaks. Collar clamp leaks which are the greatest cause of leakages in a line can also be cheaply welded by electric arc-weld, eliminating collar clamps and making permanent repairs to the line. The Gulf Pipe Line Co. is now



One big arroyo that had to be crossed on the Texas Gas Utilities Co.'s 10-inch electric arc-welded line from Maverick County into Val Verde County.

engaged in a big reconditioning job on its North Texas-Gulf Coast combination 6-8-inch line, using electric arc-weld to bring the pipe back to as near normal as possible, and plugging all leaks which may have been caused by corrosion in the many years this pipe has been buried in the ground.

There are approximately 300 miles of various sized gas lines to be laid in Southwest Texas, in Maverick, Uvalde, Kinney and Val Verde and nearby counties, and much of this work will be electric arc-welded.

Electric arc-welding is especially adaptable for welding small lines in towns, and is economical for when the arc is broken it immediately shuts off electricity thereby economizing on power. Where many moves have to be made by the welder each day on such small town lines this breaking the circuit means a great saving to the contractor and also to the company for which he is welding.

The Southern Supply Co. of Dallas, carrying oil and gas field and pipe line equipment, has an interesting moving picture showing the building of the Maverick-Val Verde County line from start to finish, and this picture is being shown over the State of Texas to all who care to see it, but especially to pipe line department men and officials. Those who have never seen a pipe line laid will know how it is done after seeing this picture.

EAST CENTRAL TEXAS

(Continued from Page 75)

east of the L. M. Rice Survey, 1 mile north of their No. 1 test. A rotary rig is being erected on the location.

Stumpff and others are building a rotary rig on a location staked 150 feet from the south and west of a 3-acre tract in the southeast 5 acres of the L. K. Riggs' 127.3-acre farm in the William Daniel Survey, Van Zandt County, northeast of the Imperator Oil Co.'s No. 1 G. W. Carter which was abandoned as dry at a total depth of 3,504 feet.

Seven Locations

Seven locations were spotted in the Van Pool and the adjoining Carroll district this week, and six wells were completed in the pool and one in the latter area. Humble Oil & Refining Co.'s No. 2 Sanger on the western side of the 200-acre Sanger Brothers' farm, but on the eastern side of the Carroll district, was apparently the best producer completed in the field. It was bottomed at 2,943 feet making an initial gauge of 248 bbls. the first three hours on eleven-sixteenths-inch choke. The Woodbine sand was topped at 2,780 feet.

Pure Oil Co.'s No. 3 W. F. Swain, in the southwest corner of the Swain 40-acre farm in the north end of the Van Field, was the smallest producer completed in the pool during the week. It made only 48 bbls. on a 24-hour gauge at a total depth of 2,935 feet.

Proration Hearing

On December 10 the Railroad Commission will hold a hearing at Austin, Tex., to consider an increase in allowable production of the Van Pool. Pure Oil Co. formerly asked that the present allowable of 27,500 bbls. be increased to around 50,000 bbls. per day, the increase to graduate in the following manner: From December 15, to January 1, the field be allowed to produce not over 35,000 bbls. per day; from January 1, to January 15, not over 40,000 bbls. per day; from January 15, to February 15, 45,000 bbls. per day, and after February 15, until otherwise ordered by the commission, not over 50,000 bbls. per day.

Humble Oil & Refining Co.'s 10-inch pipe line will be completed between December 1 and 15 and this new line will be seeking part of the allowable of the pool, consequently an increase in allowable is now being sought. The central proration committee voted against the increase at the last general proration meeting held at Austin on November 22.

COMPLETIONS IN EAST CENTRAL TEXAS

Camp County

McDonald Brothers' trustee, No. 1 B. D. Fillery, top Pecan Gap 2,410 feet, base of Pecan Gap 2,535 feet, dry and abandoned, total depth 4,319 feet.

Panola County

Warren and Davies' No. 1 F. M. McNeese, abandoned, location.

Van Zandt County

The Texas Company's No. 2 R. A. Tunnell, initial production first 24-hour gauge, 105 bbls., total depth 2,938 feet. Pure Oil Co.'s No. 3 W. F. Swain, initial production first 24-hour gauge 48 bbls., total depth 2,935 feet. Same company's No. 2 O. L. Swain, first 24-hour gauge 96 bbls., total depth 2,922 feet. Same company's No. 1 A. D. Clark, initial production first 24-hour gauge 120 bbls., total depth 2,956 feet. Same company's No. 1 F. B. Smith, initial production first 24-hour gauge 60 bbls., total depth 2,956 feet. Humble Oil & Refining Co.'s No. 2 Sanger, top sand 2,780 feet, initial production 248 bbls. first three hours through eleven-sixteenths-inch choke, total depth 2,943 feet.

Cherokee County

Arkansas Fuel Oil Co.'s No. 1 Deaton, top Woodbine sand 4,628 feet, dry and abandoned, total depth 4,705 feet.

Production

Daily average production in the East Central Texas area for the week ending November 29, follows:

Boggy Creek	2,840
Cedar Creek	45
Currie	315
Hill County	30
Mexia	3,880
Minerva	545
Nigger Creek	175
Powell	5,334
Richland	155
Rusk County	160
Thrall	40
Van	27,522
Wortham	615
Total East Central Texas	41,656
Week ending November 22	41,963
Decrease	307

DEATH OF JAMES R. CRAUN

James R. Craun of Pawhuska, Okla., for many years an employe of one or another of the Standard Oil group of companies died at his home on Monday, December 1, at the age of 66 years. His last employer was the Carter Oil Co. with which he served as a scout for about 14 years, reaching the age limit in 1929 when he retired. Previous to his service with the Carter Oil Co. he was in the employ of the Buckeye Pipe Line Co. in Ohio.

Mr. Craun was born in Tiffin, Ohio. In his youth he was a telegraph operator and later station agent in Tiffin. He was engaged in that work when Tiffin became an oil center. He left the railroad business to join the Buckeye Pipe Line Co.

Deceased is survived by Mrs. Craun, three sons and one daughter.

He was a capable scout and a man of fine personality, with a large circle of friends.

GAS COMPANY LEASING

BRADFORD, Pa., Dec. 1.—Four gas companies have been very busy during the past two weeks leasing available territory in the vicinity of Port Allegany and prospects for drilling look bright for the coming spring.

The farmers of Portage Creek, Liberty and Comes Creek have the greater part of their holdings now under contract for testing. The companies represented are the United Natural Gas Co., and capitalists who have formed an association from Kansas, Texas and Oklahoma.

This activity has been kept fairly quiet and many of the citizens have scarcely realized the scope of the project which has great possibilities as gas in paying quantities has been found on every side of the immense tract recently leased.

There is no doubt but that the finding of the recent new territory by the North Penn Gas Co. in their deep test well in Tioga County has added new impetus and capital and the outcome of the developmentments will be watched with intense interest by all concerned.

GREAT PIPE LINES FORESEEN

By Alberta Authority

CHATHAM, Ontario, Nov. 29.—Addressing the Calgary Board of Trade recently, Dr. R. C. Wallace, president of the University of Alberta, dealt with the work of the Research Council of Alberta.

"We are," he stated, "facing an era of great distribution by pipe lines of gas to be used particularly for fuel." He said the natural gas industry held great possibilities, especially in the development of by-products and the establishment of secondary industries. Minute studies were being made in Alberta laboratories to perfect the various processes discovered and render them commercially available. The next step would be establishment of a plant in the field to test the process on a larger scale.

Discussing production methods in the Turner Valley, he stated that if wet gas were repressed by application of back pressure, a larger percentage of naphtha might ultimately be recovered than by the present method of allowing wells to blow wide open.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 69)

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. — Standard rig and tools.

ECTOR COUNTY

C. P. Davis et al's No. 1 Hendricks, C SW Sec. 46, Blk. 42, Twp. 2s, T.&P. Sur. — Shut down 4,850 ft.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. — Drlg. 3,265 ft.; last sample saturated; gas increase to 300,000 ft.

Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. — Shut down 3,750 ft.; flowed 110 bbls. on July 12, shut in for storage.

Southern Crude Oil Pur. Co.'s No. 2 Cowder & Co., 660 ft. from S and W of NE cor. Sec. 34, Blk. 43, Twp. 1n, T.P. Sur. — Spudding.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Section 46, J. M. Day Sur. — Shut down 3,089 ft.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Wilson, 330 ft. from N and 1,200 ft. from W, Sec. 6, W. E. Richardson Sur. — Drlg. 1,690 ft.

Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Section 200, B.B.B.&C. Sur. — Shut down 3,130 ft.

Cranfill & Reynolds' No. 3 Willingham, 330 ft. from S and E of Sec. 307, B.B.B.&C. Sur. — Shut down 3,090 ft.

The Texas Company's No. 2-A Stephens, 330 ft. from S and E, Sec. 79, Blk. 1, H.&T.C. Sur. — Drlg. 2,615 ft.

The Texas Company's No. 1-B Teagarden, 1,990 ft. from S and 440 ft. from E, Sec. 3, W. F. Richardson Sur. — Drlg. 2,620 ft.

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE, Sec. 4, Blk. A-8, P.S.L. Sur. — Bldg. standard rig.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. — Spudded and shut down.

GLASSCOCK COUNTY

F. H. E. Oil Co.'s No. 1 Meek, 1,650 ft. N and E parallel to section lines of SW cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. — Drlg. 2,390 ft.

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. — Total depth 2,956 ft.; shut down.

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor. Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. — Shut down 660 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor. Sec. 129, Blk. 29, W.&N.W. Sur. — Sulphur water 1,433-46 feet; shut down 1,456 ft.

G. F. Getty's No. 1 Snyder, Sec. 27, Blk. 10, Twp. 1s, SW cor. of NE of NE — Drlg. 2,895 ft.; show oil 2,705-15 ft.

Greene O. & R. Co. et al's No. 1 Denman, 330 ft. from N and W of E half of NE, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. — Third shot 90 qts. 2,604-40 ft.; swabbed 60 bbls. in 8 hours; total depth 2,826 ft.

Magnolia Pet. Co.'s No. 1 Kelley Roberts, 330 ft. S and E, Sec. 112, Blk. 29, W.&N.W. Sur. — Drlg. 75 ft.

Merriwether's No. 1 Smith, 150 ft. from S, 2,400 ft. from W, Sec. 45, Blk. 33 — 2,000 ft. water in hole; shut down 3,270 ft.; 2,000 ft. sulphur water in hole; will abandon.

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 — Shut down 261 ft.

HUDSPETH COUNTY

Theison's No. 1 University, 3,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E — Spudded 35 feet and shut down.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 — Shut down 3,155 ft.

IRION COUNTY

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E, Sec. 3, Blk. 3, H.&T.C. Sur. — Drlg. 1,150 ft.

Cromwell et al's No. 3 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,320, G.C.&S.F. Sur. — Shut down 1,712 ft.; show oil 1,621-25 ft.

Dixie Oil Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. — Moving in rig.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land — Underreaming 1,395 ft.; slight show oil 1,390-95 ft.; will test.

Williams & Williams' No. 1 Noelke, 300 ft. from N and 1,020 ft. from E, Sec. 8, City of San Antonio Sur. — Drlg. 3,150 ft.

F. F. Webb's No. 1 W. H. Williams, 200 ft. from E and 750 ft. from S line, SW of NE Sec. 10, Gonzales County School Land — Shut down 100 ft.

JONES COUNTY

McBest et al's No. 1 Roberts — Total depth 1,000 ft.

Union Oil Co. of Nevada et al's No. 1 Hedrick, 200 ft. from N and W of 91.4-acre farm in G. Martinez Sur., Abst. 262, Sub. 5 — Drlg. 650 ft.

S. C. Yingling et al's No. 1 Cade, 330 ft. from N and W from SE cor. of NW of Sec. 17, Blk. 19, T.P. Sur. — Drlg. 910 ft.

LOVING COUNTY

Cromwell et al's No. 1 Russell et al, 2,310 ft. from NE and 330 ft. from NW Sec. 80, Blk. 1, W.&N.W. Sur. — Moving in material.

Douglas et al's No. 1 Wheat & Ramsey, 330 ft. from SE and 2,310 ft. from SW Sec. 83, Blk. 1, W.&N.W. Sur. — Location.

Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. — Running 6⅝-in. casing at 4,111 ft.

Henshaw et al's No. 2 Reagan & McElwain, 1,650 ft. from SW and 990 ft. from SE, Sec. 84, Blk. 7, W.&N.W. Sur. — Rig.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. — Shut down 3,383 ft.

Independent O. & G. Co.'s No. 2 Wheat, 990 ft. from NW and 330 ft. from SW, Sec. 85, Blk. 1, W.&N.W. Sur. — Shut down 4,099 ft.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. — Spudded 140 ft.; shut down.

Lockhart's No. 1 Hubbard, 6,930 ft. from NE and 330 ft. from SE, Sec. 83, Blk. 33, H.&T.C. Sur. — Location.

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 33, H.&T.C. Sur. — Rigged up and shut down.

Martin et al's No. 1 Wheat, 2,310 ft. from NE and 330 ft. from NW, Sec. 73, Blk. 1, W.&N.W. Sur. — Location.

Miller et al's No. 1 Chapman, 225 ft. from NW and 385 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. — Shut down 4,250 ft.

Rush et al's No. 1 Wheat, 330 ft. from NW and SW, Sec. 77, Blk. 1, W.&N.W. Sur. — Cellar.

Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W, Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. — Shut down to drill water well.

California Co.'s No. 5 Reagan & McElvain, 990 ft. from NW and 330 ft. from NE of Sec. 84, Blk. 1, W.&N.W. Sur. — Drlg. 3,390 ft.

California Co.'s No. 6 Reagan & McElvain, 330 ft. from SW and 1,650 ft. from SE, Sec. 84, Blk. 1, W.&N.W. Sur. — Drlg. 2,035 ft.

California Co.'s No. 7 Reagan & McElvain, 2,310 ft. from NW and 990 ft. from NE, Sec. 89, Blk. 1, W.&N.W. Sur. — Location.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 330 ft. from S and W, Sec. 1, B.S.&F. Sur. — Gas sand 1,814-17 ft.; estimated 200,000 ft. gas; shut down 1,883 ft.; to underream 5 3/16-in. casing.

Barnett et al's No. 4 Callan City Co., 1,200 ft. from S and 2,200 ft. from W, Sec. 1, B.S.&F. Sur. — Machine.

Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. — Shut down 2,490 ft.; moving in casing.

MIDLAND COUNTY

Kerwin et al's No. 1 Mathen, 2,310 ft. from N and 335 ft. from W line, Sec. 40, W. L. Gray Sur. — Drlg. 3,355 ft.

MITCHELL COUNTY

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. Sur. — Shut down 3,112 ft.; top pay 3,038-75 ft.; shot 270 qts. 3,020-92 ft.; swabbed 40 bbls. in 24 hrs.

Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W, parallel to section lines of NE cor. Sec. 3, Blk. 27, T.&P. Sur. — Spudded 10 ft. and shut down.

PECOS COUNTY

Bell et al's No. 1 Eaton, 2,310 ft. from NE and 990 ft. from SE, Sec. 33, Blk. 3, H.&T.C. Sur. — Rigging up.

Bell et al's No. 1 Schaff & Blackman, 2,310 ft. NE and 330 ft. NW of E cor. Sec. 37, Blk. 3, H.&T.C. Sur. — Show oil 1,562-64 ft.; waiting on cement to set; total depth 1,564 ft.

Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW, Sec. 28, Blk. 3, H.&T.C. Sur. — Moving in machine.

Dittman's No. 2 Eaton, 990 ft. from SW and 330 ft. from SE, Sec. 35, Blk. 2, H.&T.C. Sur. — Location.

Dittman's No. 1 Eaton, 330 ft. from NE and SE, Sec. 37, Blk. 3, H.&T.C. Sur. — Spudding.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. — Tools in hole 6,170 ft.

Humble Oil & Ref. Co.'s No. 1-B Thoman, 1,608 ft. from N and 4,062 ft. from E of Sec. 98, Blk. OW, G.C.&S.F. Sur. — Shut down 3,575 ft.

Lewis & Slagel's No. 1 Bell, 330 ft. from N and W of SE Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. — Location.

Mann's No. 1 Schraff & Blackman, 2,000 ft. from SW and 990 ft. from SE Sec. 32, Blk. 3, H.&T.C. Sur. — Rigging up.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 104, G.C.&S.F. Sur. — Location.

McCarty Oil Co.'s No. 3 Gray, 700 ft. from N and 2,260 ft. from W, Sec. 591, G.C.&S.F. Sur. — Drlg. 1,371 ft.

Messenger et al's No. 1 Buts, 1,320 ft. from NW and 1,170 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur. — Drlg. 1,140 ft.

Mid-Kansas O. & G. Co. et al's No. 1-A Sellman, 250 ft. from S and 330 ft. from W Sec. 12, Blk. 194, G.C.&S.F. Sur. — Rigging up.

J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. — Shut down 1,780 ft.

J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S 150 ft. from E, G.C.&S.F. Sur. — Total depth 1,230 ft.; top pay 1,089 ft.; plugged back to 1,186 ft.; will drill deeper.

J. D. O'Mara's No. 1 Streety, S of Sec. 1, W. P. Howard Sur. — Shut down 2,310 ft.; fishing.

Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. — Shut down 2,440 ft.; flowing sulphur water.

Perren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, E.&T.C. Sur. — Fishing 1,765 ft.

Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W, Sec. 13, Blk. 194, G.C.&S.F. Sur. — Total depth 1,930 ft.; top pay 1,892 ft.; flowing 25 bbls. per day.

R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C. Sur. — Spudded and shut down.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. — Drlg. 4,845 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. — Shut down 405 ft.

Side & Side's No. 1 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.C. Sur. — Drlg. 3,015 ft.

Schilling & Slaughter's No. 1 Yates, 1,580 ft. N and 150 ft. E of NW cor. Runnels County School Land, but located in Sec. 70, Blk. 1, I.&G.N. Sur. — Shut down 357 ft.

Southern Crude Oil Pur. Co.'s No. 1 Scharff & Blackman, 4,550 ft. 40° E and 330 ft. 50° W of most southerly cor. Sec. 28, Blk. 3, H.&T.C. Sur. — Drlg. 130 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW, Sec. 31, Blk. 34, H.&T.C. Sur. — Location.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor. Sec. 9, Blk. 131, T.&St.L. Sur. — Shut down 3,504 ft.

Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. — Drlg. 2,509 ft.

Williams & Moran's No. 1 Heiner Est., 450 ft. from N and 2,490 ft. from W of Sec. 590, G.C.&S.F. Sur. — Drlg. 1,048 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 900 ft. from W of Sec. 25, Blk. 9 — Waiting on cement to set 3,051 ft.

Slick Estate et al's No. 1 August, C SE Sec. 1,216, G.C.&S.F. Sur. — Drlg. 1,890 ft.

Texon O. & L. Co.'s No. 4-B University, 1,130 ft. from N and W of Sec. 26, Blk. 9 — Drlg. 6,481 ft.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. — Shut down 380 ft.

Black & Kink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 50 — Shot second time 30 qts. 1,820-31 ft.; shut down 1,860 ft.

Riggs & Smith's No. 1 Lee Monroe, 2,190 ft. from NE and 330 ft. from NW line, Sec. 34, Blk. 8, H.&L.N. Sur. — Shut down 176 ft.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N. — Temporarily abandoned.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. — Shut down 4,415 ft.

California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. — Coring 4,250 ft.; hole full of water.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Hell Sur. No. 419 — Cleaning out 1,695 ft.

George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E Sec. 262 — Show oil 2,028 ft.; shut down 2,642 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW Sec. 56, Blk. 1, G.H.&S.A. Sur. — Drlg. 5,660 ft.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A. Sur. — Shut down 3,960 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. — Shut down 750 ft.

Westyde et al's No. 1 Meador, 1,320 ft. from S and E of Sec. 661, G.C.&S.F. Sur. — Location.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A. Sur. — Shut down 5,027 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. — Pumping 20 bbls. per day for fuel oil; total depth 3,501 ft.

Camp Spring Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N. Sur. — Shut down 875 ft.

L. D. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. — Spudded and shut down.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. — Shut down 4,970 ft.

Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. — Location.

Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 155, Blk. 97, H.&T.C. Sur. — Underreaming 12¼-in. casing; total depth 800 ft.

Mid-Kansas O. & G. Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. — Drlg. 4,420 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, H.&T.C. Sur., but in Sec. 16, Blk. 21, Twp. 4s, T.&P. Sur. — Shut down 515 ft.

TAYLOR COUNTY

Eastland Oil Co. et al's No. 2 Hunter, 3,418 ft. from S and 2,174 ft. from E of William R. Ellis Sur. — Shut down 2,405 ft.; show oil 2,388-94 ft.; testing.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land — Ran 3-in. casing; total depth 6,250 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P. Sur. — Shut down 2,570 ft.

Sanger et al's No. 1 City of Abilene, 330 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land — Drlg. 1,660 ft.

Sanger O. & R. Co.'s No. 1 Osborn, 330 ft. from SW of SE Sec. 68, Blind Asylum Land — Rigged up and shut down.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. — Shut down 2,669 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry Sur. — Shut down 3,150 ft.

Milham Corp. of Texas' No. 1 R. M. Bassett et al, 150 ft. from N line and 2,640 ft. from E and W lines of Sec. 76, Blk. Y, James Bass Sur. — Location.

Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. — Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C Sec. 16, Blk. D-7, E.L. Sur. — Shut down 880 ft.; moved off machine.

Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur. — Drlg. out cement; 8¼-in. casing set at 4,467 ft.; total depth 5,239 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G. Sur. — Shut down 640 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. — Shut down 760 ft.; show oil and gas 725 ft.

Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor. Sec. 20, Blk. 24, H.&T.C. Sur. ..... Location.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. .... Shut down 1,835 ft.
Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Shut down 5,010 ft., contract depth; may drill deeper.
Pratt & Hancock's No. 1 Lewis, 450 ft. S and 518 ft. E of SE cor. of James Webb Sur. No. 77, located in Albert Black No. 75 ..... Location.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Survey No. 2 ..... Location.

UPTON COUNTY

Duffey et al's No. 2 McClintic, 325 ft. N and 967 ft. E of Sec. 206, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,945 ft.; top pay 2,870 ft.; 250,000 ft. gas at 2,695 ft.; 1,500 ft. oil in hole.
Humble O. & R. Co.'s No. 1 Damron et al, 330 ft. from N and W Sec. 192, Blk. F, C.C.S.D.&R.G.N.G. Sur. ... Cellar.
T. P. Coal & Oil Co.'s No. 1 King Ranch Oil & Lignite Co., 2,310 ft. from N and 990 ft. from W, Sec. 28, Blk. 3, M.-K.-T. Sur. ..... Drlg. 700 ft.
Weekly Oil Corp.'s No. 1 Shirk, 466 ft. from S and 2,317 ft. from E, Sec. 15, Blk. 3, M.-K.-T. Sur. ..... Preparing to run 6⅝-in. casing 2,500 ft.
Weekly Oil Corp. et al's No. 1 McClintic, 1,650 ft. from N and 330 ft. from E Sec. 206, Blk. F, C.C.S.D. &R.G.N.G. Sur. ..... Rigging up.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Fishing 6,780 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L. Sur. ..... Shut down 3,035 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 47, Blk. Y. Shut down 4,009 ft.

WARD COUNTY

Alpine Oil Co.'s No. 2 Boogher, 2,200 ft. from NW and 1,800 ft. from SW lines, Sec. 11, Blk. 5, H.&T.C. Sur... Drlg. 915 ft.
Black & Massey's No. 1 Allen, 2,108 ft. from NW and 2,100 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur. ..... Fishing 1,150 ft.
Empire Gas & Fuel Oil Co.'s No. 1 John Sealy estate, 330 ft. from S and 1,650 ft. W of NE cor., Section 5, Blk. F, T.&M.M. Bros. Sur. ..... Running 12½-in. casing 387 ft.
Grand Falls Oil Co.'s No. 1 Blair and Boogher, 500 ft. from SW and 1,160 ft. from NW Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 575 ft.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur..... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.
Kugle et al's No. 1 Wallace, 330 ft. from SE and 1,263 ft. from SW Sec. 19, Blk. 34, H.&T.C. Sur. ..... Driving 12½-in. casing 225 ft.
Magnolia Pet. Co.'s No. 1 Sealy, 330 ft. from S and E of NE cor. Sec. 46, Blk. 2, G.M.M.B.&A. Sur. ..... Shot second time with 120 qts. 3,017-65 ft.; flowed 31 bbls. first 12 hrs.; total depth 3,085 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C. Sur. ..... Shut down 1,200 ft.
Rector Oil Co. et al's No. 1 Boogher, 1,783 ft. from NW and 1,800 ft. from SW, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Location.
Richardson et al's No. 5 O'Brien et al, 330 ft. from N and 2,970 ft. from W of Sec. 5, Blk. F, G.M.M.B.&A. Sur. ..... Making 7,000,000 ft. gas and 75 bbls. oil per day; total depth 2,769 ft.
Rickford & Smith's No. 1 Johnson, 120 ft. NE and 175 ft. SE of N cor. Sec. 7, Blk. 32, H.&T.C. Sur., but located in Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 645 ft.
California Co. et al's No. 1 Lanham, 990 ft. from NE and SE, Sec. 35, Blk. 34, H.&T.C. Sur. ..... Building rig.
California Co.'s No. 1 Gordon, 330 ft. from NE and SE Sec. 6, Blk. 34, H.&T.C. Sur. ..... Location.
T. P. Coal & Oil Co.'s No. 1 James, 330 ft. from SW and SE, Sec. 5, Blk. 34, H.&T.C. Sur. ..... Drlg. 115 ft.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W. Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Drlg. 2,650 ft.
T. P. Coal & Oil Co.'s No. 1 Barker, 330 ft. from SW and NW of Sec. 27, Blk. B-29, Public School Land ..... Shut down 2,425 ft. for storage.
California Co.'s No. 1 Allen, 2,310 ft. from NE and 330 ft. from SE, Sec. 30, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,124 ft.

WINKLER COUNTY

Magnolia Pet. Co.'s No. 1 Bashara, 1,650 ft. from S and 2,310 ft. from W, Sec. 17, B-3, P.S.L. Sur. ..... Fishing 268 ft.
A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,506 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor. Sec. 2, Blk. B-5 ..... Shut down 4,639 ft.
Turman et al's No. 1 Daugherty, 2,310 ft. from E and 2,310 ft. from S line, Sec. 16, Blk. 74, Public School Land ..... Coring lime 3,151 ft.; hole full water with very little oil.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 70)

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... Fishing 600 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Harbaugh, 1,263 ft. N, 330 ft. W, Lot 182, Sec. 114, Blk. 3, I.&G.N. Sur..... T.D. 3,302 ft; T.P. 3,284-97 ft; 900 ft. oil in hole.
Cree & Hoover's No. 1 Call, 330 ft. N and W, SW, Sec. 105, Blk. 3, I.&G.N. Sur. ..... Drlg. 770 ft.
Empire G. & F. Co.'s No. 1 McCullough, 1,320 ft. S, 886 ft. W. Sec. 153, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,860 ft.
Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W. of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... S.D. 2,240 ft.
Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 884 ft. W. of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... Drlg. 2,565 ft.
Dulaney & Word's No. 1 Morse, 330 ft. S and W, Sec. 18, Blk. A-9, H.&G.N. Sur. ..... Drlg. 2,705 ft.
Empire G. & F. Co.'s No. 1 Bell, 1,320 ft. S, 1,660 ft. E. SW. Sec. 111, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,578 ft.
Empire G. & F. Co.'s No. 1 Cantrell, 330 ft. S and E, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Estimated 10,000,000 ft. gas 2,630-40 ft; T.D. 3,010 ft; 38,500,000 ft. gas 2,630-3,010 ft.
Empire G. & F. Co.'s No. 1 Sullivan, 330 ft. NW of E 64 ac. of W 104 ac. of S 264 ac., N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... 1,000,000 ft. gas 2,775 ft; drlg. 3,225 ft; S.O. 3,135 ft. and 3,210-12 ft.
Hurst et al's No. 1 Ayres, 330 ft. S and E, Sec. 76, Blk. 3, I.&G.N. Sur. ..... Rotary rig.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,765 ft.
Magnolia Pet. Co.'s No. 1 Latham, 876 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... 9,000,000 ft. gas 2,705 ft; crooked hole 2,960 ft.
Magnolia Pet. Co.'s No. 2 Heitholt, 150 ft. S, 1,156 ft. W, SE, Sec. 152, Blk. 3, I.&G.N. Sur. ..... Spudding.
Magnolia Pet. Co.'s No. 2 Latham, 175 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,485 ft.
Magnolia Pet. Co.'s No. 1 Morse, 330 ft. N and W, S½ NE, Sec. 5, Blk. 26, H.&G.N. Sur. ..... Bldg. rig.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Bldg. rig.
Midwest Exptln. Co.'s No. 1-B Taylor, 660 ft. N and W, Sec. 7, Blk. H, A. W. Willard Sur. ..... Drlg. 2,610 ft.
Midgray Oil Co.'s No. 1 McCullough, 267 ft. N, 150 ft. E of 246.9 ac. in Sec. 153, Blk. 3, I.&G.N. Sur..... Drlg. 2,285 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Fishing for bit; T.D. 2,620 ft.
North American O. & G. Co.'s No. 1 Duncan, 310 ft. N, 660 ft. E, E½ SW, Sec. 135, Blk. 3, I.&G.N. Sur..... Standardizing 2,423 ft.
North American O. & G. Co.'s No. 1 Sullivan, 1,320 ft. S and E, Sec. 160, Blk. 3, I.&G.N. Sur. ..... Rig on ground (rotary).
Phillips Pet. Co.'s No. 1 Barrett, 330 ft. S, 150 ft. W, W½, N 56 ac., Sec. 1,360, Blk. 3, I.&G.N. Sur..... Drlg. 2,830 ft; 5,000,000 ft. gas 2,760-75 ft.
Phillips Pet. Co.'s No. 2 Barrett, 130 ft. N, 465 ft. W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,460 ft.
Prairie O. & G. Co.'s No. 1 Reynolds, 330 ft. S and E, NW, Sec. 84, Blk. 3, I.&G.N. Sur. ..... Estimated 1,900,000 ft. gas 2,590-2,920 ft; drlg. 3,140 ft; S.O. 3,097 ft.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 154, Blk. 3, I.&G.N. Sur. ..... Estimated 4,000,000 ft. gas 2,875 ft; S.D. 3,015 ft.
Shamrock O. & G. Co.'s No. 1 Reynolds, 330 ft. N and E, SE SE, Sec. 84, Blk. 3, I.&G.N. Sur. ..... S.O. 2,905 ft. and 2,994 ft; S.D. 3,193 ft; P.B. 3,103 ft; shot with 20 qts. 3,091-3,101 ft; to reshoot.
Skelly Oil Co.'s No. 1 Heitholt, 150 ft. N, 3,806 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. ..... 9,000,000 ft. gas 2,606-2,865 ft; fishing 2,915 ft.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... 3,000,000 ft. gas 2,150-70 ft; S.D. 2,892 ft; 400 ft. oil in hole.
Southern States Gas Co.'s No. 1 Case, 330 ft. N and W, E½, Sec. 181, Blk. B-2, H.&G.N. Sur. ..... Spudded.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... Rig.
The Texas Co.'s No. 3 Brown, 150 ft. S, 330 ft. W of 247-ac. lease, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,065 ft; S.O. 2,935 ft.
Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... Cellar.

HUTCHINSON COUNTY

Combination O. & G. Co.'s No. 1 Johnson Bros. (Whaley), C SE SW, Sec. 2, Blk. Y-2, T.T.R.R. Sur. ..... Rigging up.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E, of N 80 ac. S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. .. Rig.
Dixon Creek Oil Co.'s No. 1 Johnson Bros., 330 ft. N and W of E 60 ac. of NW 100 ac., Sec. 1, Blk. X03, H.&O.B. Sur. ..... T.D. 3,112 ft; plugging back.
Huber Prod. Co.'s No. 1 Johnson Bros., 330 ft. N and E, E½ NW, Sec. 30, Blk. Y, A.&B. Sur. ..... S.D. 2,800 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E. of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... Rotary rig.
Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. ..... Spudding.
Texas Interstate P. L. Co.'s No. 1 Bivins, C E½ of N 160 ac., Sec. 91, Blk. 6, H.&T.C. Sur. ..... Drlg. 690 ft.
Lanier et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ..... Spudded.
Mitchell et al's No. 1 Dunnaway, 330 ft. N, 990 ft. E, Sec. 7, T.T.R.R. Sur. ..... Bldg. rotary rig.
Prairie O. & G. Co.'s No. 1 Read, C SW, J. M. McDonald Sur. ..... T.D. 3,223 ft; plugging back.
Sinclair O. & G. Co.'s No. 1-A Johnson Bros., 330 ft. N, 430 ft. E, NW, Sec. 32, Blk. Y, A.&B. Sur..... C.O.; T.D. 1,790 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.O. 3,065 ft. and 3,108-10 ft; S.D. 3,110 ft.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... Lowering 5 3/16-in. csg; T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. N, 330 ft. E, W½ SE, Sec. 135, T.&N.O. Sur. ..... Rig on ground.
Delmar Oil Co.'s No. 1-A Jones, 330 ft. N, 990 ft. E, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... Estimated 100,000,000 ft. gas 3,090 ft; fishing 3,307 ft.
Gulf Prod. Co.'s No. 1 Dare, C SE, Sec. 312, Blk. 44, H.&T.C. Sur. ..... Rig up.
Home Gas Co.'s No. 1 Reeder, 330 ft. N and W, N½ E½ NE, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... 25,000,000 ft. gas 3,139-3,200 ft; T.D. 3,498 ft; C.O.
Morton et al's No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... Cellar.
Shamrock O. & G. Co.'s No. 1-C Coffee, 330 ft. N and E, SE, Sec. 361, Blk. 44, H.&T.C. Sur. ..... Rotary rig on ground.
Shamrock O. & G. Co.'s No. 1 Sullivan, 330 ft. S and E, NE, Sec. 139, Blk. 3-T, T.&N.O. Sur. ..... Drlg. 1,870 ft.
Sunray Oil Co.'s No. 1 C. R. Jones, 330 ft. E, 330 ft. S, W½ SW, Sec. 164, T.&N.O. Sur. ..... T.D. 3,075 ft; to kill 101,000,000 ft. gas; to deepen.
Sunray Oil Co.'s No. 2 Jones, 330 ft. S, 990 ft. E, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... Rotary rig.
Chambers et al's No. 1 Herring, CNL, Sec. 29, Blk. S, G.C.&S.F. Sur. ..... S.D. 680 ft.

POTTER COUNTY

Texas Interstate P. L. Co.'s No. 1 Rockwell, C N½ S½, Sec. 102, Blk. 46, H.&T.C. Sur. ..... Drlg. 650 ft.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14.. S.D. 1,250 ft.

WHEELER COUNTY

Devore & Robinson's No. 1 Keeley, 2,310 ft. S and E, Sec. 33, Blk. A-4, H.&G.N. Sur. ..... Rotary rig.
Guernsey Oil Co. et al's No. 1 Sewell, 320 ft. N and E, Sec. 38, Blk. 13, H.&G.N. Sur. ..... S.G. 1,985 ft; drlg. 2,305 ft.
Mid-Kansas O. & G. Co.'s No. 1 Harvey, 660 ft. S and W, NE, Sec. 56, Blk. 23, H.&G.N. Sur. ..... 5,000,000 ft. gas 1,425-40 ft; drlg. 1,465 ft.
Wischkamper et al's No. 1 Kiser, 330 ft. N and E, SW Sec. 33, Blk. 17, H.&G.N. Sur. ..... S.D. 2,416 ft.
Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ..... Drlg. 2,192 ft; S.O. 2,150-90 ft; some wtr.
Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ..... S.D.

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GULF COAST FIELDS AND WILDCATS

(Continued from Page 52)

South Texas Pet. Co.'s No. 3 Burt, east ..... Sandy shale showing oil 3,826 ft.; cmtd. csg. to test.
Sun Oil Co.'s No. 13 Bender (workover) ..... Total depth 4,589 ft.; plugged 4,529 ft.
Sun Oil Co.'s No. 14 Bender, west ..... Shale 5,684 ft.; abandoned.
Sun Oil Co.'s No. 16 Bender ..... Derrick.
Sun Oil Co.'s No. 18 Bender ..... Drlg. shale 4,132 ft.
Sun Oil Co.'s No. 19 Bender ..... Location.
Sun Oil Co.'s No. 49 River, north ..... Abandoned 5,933 ft.
The Texas Company's No. 2 fee ..... Cmtd. 6⅝-in. csg. 4,397 ft.
Trapshooter Oil Co.'s No. 2 Rosenbaum ..... Shale 4,067 ft.; set 45 ft. screen 4,067 ft.; to pump.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 2 Manchester Corp. ..... Rig.
Mike Kouri's No. 1 Jones fee, northwest ..... Tested salt water 3,672 ft.; pulling screen to deepen.
Rio Bravo Oil Co.'s No. 20-A Settegast ..... Total depth 5,550 ft.; drlg. sandy shale 5,170 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 61 Davis ..... Rig standing.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 5 Lost Lake ..... Anhydrite 5,549 ft.; fishing core barrel.
Pure Oil Co.'s No. 12 Lost Lake ..... Drlg. sand 2,752 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Total depth 5,662 ft.; sidetracking hard sand 4,376 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 103-A Cotton ..... Sand and shale showing oil 597 ft.; cmtd. csg.
Rio Bravo Oil Co.'s No. 100-A Cotton ..... To pump 539 ft.

GOOSE CREEK—HARDIN COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Abandoned 4,993 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 88 Glayds (workover) ..... Reset 1 jt. screen 3,632 ft.; flowed fresh water.
Yount Lee Oil Co.'s No. 72 McFaddin ..... Sand 5,068 ft.; drill stem stuck.
Yount Lee Oil Co.'s No. 143 McFaddin ..... Drlg. shale and lime 5,935 ft.

NORTH DAYTON—LIBERTY COUNTY

Saxet Oil Co.'s No. 2 Davis ..... Set 1 jt. 4½-in. screen 5,175 ft.; tested salt water.
Harrison & Abercrombie's No. 1 Jones ..... Total depth 4,625 ft.; sidetracking 1,800 ft. and cmtd.
Harrison Oil Co.'s No. 4 Quintette (workover) ..... Salt 5,210 ft.
Harvey Smith's No. 1 Kynerd ..... Drlg. hard shale and sand 3,710 ft

HIGH ISLAND—GALVESTON COUNTY

Gulf Prod. Co.'s No. 10 Smith ..... Total depth 5,792 ft.; drlg. sidetracked hole hard sand 5,182 ft.
Marrs McLean's No. 12 Cade (workover) ..... Drlg. hard sand 4,415 ft.
Marrs McLean's No. 19 Cade ..... Drlg. sand and lime 3,432 ft.
Marrs McLean's No. 20 Cade ..... Rig.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 14 O'Brien ..... Salt 4,450 ft.; drill stem stuck.
Trinity Petroleum Co.'s No. 1 C. W. Pickett ..... Rigging up to pump 3,420 ft.

ORANGE—ORANGE COUNTY

Gulf Prod. Co.'s No. 12 Hagen-Moore ..... Drlg. gumbo 3,408 ft.
Orange Pet. Co.'s No. 13 Chesson ..... Swabbing 3,504 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 27 Moore ..... Drlg. gumbo and lime 1,367 ft.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 2 Starks ..... Swabbing showing oil and gas 6,045 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 4 Janner ..... Drlg. anhydrite 3,186 ft.
Sun Oil Co.'s No. 1 Freeman ..... Losing returns 1,998 ft.
Sun Oil Co.'s No. 3 Grote ..... Set 69 ft. screen 1,198 ft.; flowed 40 bbls.; running tubing.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 307 fee ..... Drlg. shale 2,811 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.'s No. 1-C Kirby fee ..... Spudded.
Cranfill-Reynolds Oil Co.'s No. 6 Moore's Bluff ..... No report.
Cranfill-Reynolds Oil Co.'s No. 7 Moore's Bluff ..... No report.
Yount Lee Oil Co.'s No. 3 Moore's Bluff ..... Trying to pull stuck drill stem 7,836 ft.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Eszel ..... Sand and shale 5,796 ft.; cmtd. 7-in. csg. 5,754 ft.
Gulf Prod. Co.'s No. 10 Boyt ..... Drlg. gumbo 1,164 ft.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Volney ..... Standing shale 535 ft.

REFUGIO—REFUGIO COUNTY

Brookins et al's No. 1 Kay ..... Shut down 4,320 ft.
Houston Oil Co.'s No. 1 Rooke ..... Drlg. sticky shale 5,553 ft.
Houston Oil Co.'s No. 2-A Fannie Heard ..... Drlg. hard sandy lime rock 5,110 ft.
Houston Oil Co.'s No. 1 Doughty ..... Drlg. sandy shale 4,953 ft.
Houston Oil Co.'s No. 1 Tom Heard ..... Drlg. sandy lime 5,740 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Total depth 5,913 ft.; plugged to 2,524 ft.
Phillips Petroleum Co.'s No. 1 O'Brien ..... Total depth 6,643 ft.; perforated csg. 6,366-92 ft.
O. M. Jones' No. 2 Mitchell (workover) ..... Pulling screen 5,441 ft.
Luling Oil & Gas Co.'s No. 1 Talman, Blk. 104 ..... Set 22 ft. screen 6,458 ft.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Standing 4,928 ft.
Luling Oil & Gas Co.'s No. 1 City, Lot 16, Blk. 4 ..... Drlg. shale and lime 1,004 ft.
Mission Drilling Co.'s No. 1 O'Brien (workover) ..... Set 10 ft. screen 6,440 ft.; comp. flowing 677 bbls. pipe line oil.
Moody-Seagraves-Karona's No. 1 F. Hayser ..... Cmtd. 12½-in. csg. 458 ft.
Moody-Seagraves Prod. Co.'s No. 1 Linney, Blk. 41 ..... To set 6⅝-in. csg. 6,458 ft.
Moody-Seagraves Prod. Co.'s No. 1 Rooke ..... Dry and abandoned 6,504 ft.
Moody-Seagraves Prod. Co.'s No. 1-A St. John ..... Drlg. sandy shale 6,634 ft.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor ..... Location.
Moody-Seagraves and Phillips Pet. Co.'s No. 3-B J. F. B. Heard ..... Location.
Moody-Seagraves and Phillips Pet. Co.'s No. 1-C J. F. B. Heard (Independent) ..... Total depth 5,720 ft.; rigged up to work over.
Nichols Oil Co.'s No. 1 Wood ..... Drlg. shale 2,725 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Derrick.
Royal Oil Co.'s No. 1 Hornburg (workover) ..... Set 20 ft. screen; comp. flowing 600 bbls. fluid, 50% water 5,447 ft.
Saxet Oil Co.'s No. 1 L. H. Johnson, Blk. 11 ..... Location.
Saxet Oil Co.'s No. 1 Fox heirs (workover) ..... Total depth 3,963 ft.; shut down.
Saxet Oil Co.'s No. 1 Wilson Heard (workover) ..... Gas sand 3,661-80 ft.; oil sand 3,680-83 ft.; cmtd. 4½-in. csg. 3,660 ft.
Saxet Oil Co.'s No. 1 Ryals (workover) ..... Drlg. shale and lime 6,152 ft.
Sun Oil Co.'s No. 2 Rea ..... Set 25 ft. screen; swabbing.
L. L. Smith's No. 1 Rodgers ..... Sand 3,431 ft.; cmtd. 9⅝-in. csg. 3,431 ft.
The Texas Company's No. 2 Shelton (workover) ..... Pulling liner and screen to deepen 5,467 ft.
Union Producing Co.'s No. 11 Fannie Heard ..... Plugged to 3,625 ft.
Union Prod. Co.'s No. 3 Fox ..... Comp. flowing 75 bbls. fluid 50% water 3,675 ft.
Union Prod. Co.'s No. 2 Moss-Powers, Blk. 109 ..... Derrick.
Union Prod. Co.'s No. 7 O'Brien, Blk. 85 ..... Location.
Union Prod. Co.'s No. 5 Powers ..... Drlg. lime and shale 4,530 ft.
Union Prod. Co.'s No. 8 Powers, Blk. 82 ..... Location.
Union Prod. Co.'s No. 6 Nancy J. Ryals ..... Location.
Union Prod. Co.'s No. 1 Rose Lambert ..... Location.
Union Prod. Co.'s No. 1 Shelton ..... Location.
Union Prod. Co.'s No. 1 J. Shay ..... Location.
Union Prod. Co.'s No. 3 Mitchell (workover) ..... Pulling liner.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. sandy shale 7,083 ft.
Vacuum Oil Co.'s No. 8 Farquahar ..... Setting up.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Set screen 5,623 ft.
Vacuum Oil Co.'s No. 30 Miller ..... Drlg. sandy shale 2,700 ft.
Vacuum Oil Co.'s No. 31 Miller ..... Location.

EDGERLY—CALCASIEU PARISH

Rex Petroleum Co.'s No. 13 Hunter ..... Drlg.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 1 State ..... Set 1 jt. screen 4,084 ft.; comp. flowing 200 bbls. oil.
Calcasieu Oil Co.'s No. 22 Watkins ..... Set 2 jts. screen 2,855 ft.; comp. flowing 1,310 bbls. pipe line oil.
R. E. Seiss' No. 1 Vincent ..... Drlg. lime rock 1,982 ft.
The Texas Company's No. 7 State ..... Drlg. shale 5,289 ft.
The Texas Company's No. 8 State ..... Location.
Yount Lee Oil Co.'s No. 34 State ..... Location.
The Texas Company's No. 36 State ..... Location.
The Texas Company's No. 37 State ..... Location.
The Texas Company's No. 38 State ..... Location.
The Texas Company's No. 39 State ..... Location.
The Texas Company's No. 40 State ..... Location.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Housierre Latrielle ..... Sand showing gas and oil 8,609-13 ft.; tried to blow out; drill stem stuck.

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 5 Gardner ..... Rig.
Gorbat Oil Co.'s No. 1 Clement Lyons ..... Total depth 4,138 ft.; bailing 3,511 ft.
Vinton Pet. Co.'s (Lucky Ten) No. 1 Lizzo ..... Total depth 3,326 ft.; preparing to work over.
Vinton Pet. Co.'s No. 2 Gray (workover) ..... Total depth in salt 3,840 ft.; sidetracking 3,130 ft.
Wilson-Broach's No. 5 Wilson ..... Rig.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Fishing drill stem 6,085 ft.
Rycade Oil Corp.'s No. 4 State ..... No report.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 10 Yount Lee ..... Drlg. gumbo 2,813 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 763 Fee ..... Drlg. sand showing oil 4,591-4,601 ft.
Union Sulphur Co.'s No. 764 Fee ..... Salt 4,453-6,473 ft.; plugged to sand 4,278 ft.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Rock 5,187 ft.; drill stem stuck.
O'Kara et al's No. 1 Schrader ..... Shut down for fuel 1,794 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. ..... Fishing drill stem 7,584 ft.
The Texas Company's No. 1 J. H. Murdock, Fresno ..... Drlg. shale 6,505 ft.
Mills Bennett Prod. Co.'s No. 2 Reece, Allen ..... Rock 2,180 ft.; fishing.
Mills Bennett Prod. Co.'s No. 2 Random, Allen ..... Location.
Mills Bennett Prod. Co.'s No. 1 Poole (workover) ..... Reset screen 4,374 ft.; swabbing 500 bbls. oil daily.
Faust et al's No. 5 Faust ..... Drlg. sand 5,693 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ..... Total depth 4,261 ft.; sidetracking shale 3,937 ft.
Freeport Sulphur Co.'s No. 2 Seaburn ..... Fishing drill stem 1,132 ft.
Layne et al's No. 7-A Wisdom, Damon Mound ..... Drlg. shale 2,247 ft.
Rycade Oil Corp.'s No. 2 Seaburn, Stratton Ridge ..... Drlg. sand 4,146 ft.
Steel & Strickland's No. 1 Lockbridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur. ..... Drlg. shale 309 ft.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Drlg. sand, shale and lime 4,448 ft.
Shell Pet. Corp.'s No. 2 Herff, Moss Bluff ..... To set 6⅝-in. screen 5,804 ft.

GRIMES COUNTY

Cullen & West's No. 1 Bookman, J. Greenwood Sur. ..... Drlg. shale 2,710 ft.
Deering et al's No. 1 Munker, Darius Gregg Sur. ..... Drlg. 3,525 ft.
Deering & Noble's No. 1 Templeton, 6 miles south of Navasota ..... Shut down 3,500 ft.

HARDIN COUNTY

D. O. Speight's No. 1 fee, near Batson ..... Drlg. gumbo 2,929 ft.

HARRIS COUNTY

Cypress Oil & Development Co.'s No. 2 Kitzman ..... Drlg. water sand 1,842 ft.
Gulf States Oil Co.'s No. 1 Angsperger ..... Drlg. shale and lime 3,096 ft.
Humble Oil & Ref. Co.'s No. 1 Gerring, Mykawa ..... Rig.
Humble Oil & Ref. Co.'s No. 4 Minnetex, Mykawa ..... Drlg. shale 3,202 ft.
Sloane Prospecting Co.'s No. 1 Wasova ..... Drlg. gumbo 1,616 ft.
W. C. Turnbow et al's No. 1 Miller, Arthur McCormick Sur. ..... Drlg. sand and shale 4,361 ft.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna ..... Gas sand 3,866-70 ft.; cmt. 6⅝-in. csg. 3,864 ft.
Wright Bros.' No. 2 Lee ..... Drlg. sand 4,148 ft.
Warner-Quinlan's No. 1 Hungerford, Henry Smith Sur. ..... Derrick.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234 ..... Driving piling for derrick.
Keith et al's No. 1 Reed-Hankamer ..... Rig.
The Texas Company's No. 4 Pipkin, Big Hill ..... Drlg. hard sand 3,570 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill ..... Shut down 112 ft.
Humble Oil & Ref. Co.'s No. 1 Breeding, Moss Bluff ..... Drlg. shale 6,718 ft.
Humble Oil & Ref. Co.'s No. 1 Orlando Hylton, Moss Bluff ..... Drlg. 6,544 ft.
Humble Oil & Ref. Co.'s No. 1 Sergent, Moss Bluff ..... Total depth 5,784 ft.; cmtd. 9⅝-in. csg.
Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 ..... Derrick.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherds Mott ..... Drlg. sand and shale 5,173 ft.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove ..... Killed gas blowout 6,250 ft.; to deepen.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, south of Conroe ..... Shut down 678 ft.; gumbo.
Price & Whitehead's No. 2 Guerges ..... Shut down 2,956 ft.

NACOGDOCHES COUNTY

E. L. Burke et al's No. 1 Latimer, Jose De Los Santos Sur. ..... No report.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman ..... Shut down 3,120 ft.

SAN JACINTO COUNTY

E. P. Edwards et al's No. 1 Bennett, northwest of Cold Springs ..... Rig.

VICTORIA COUNTY

The Texas Company's No. 1 McFaddin, H. Bonny Sur. ..... Drlg. sand 6,631 ft.
Lion Oil & Ref. Co.'s No. 2 McFaddin, M. Traviers Sur. ..... Total depth 6,454 ft.; cmtd. back to 3,760 ft.; to test gas sand.
Newton et al's No. 1 West ..... Shut down 1,560 ft.

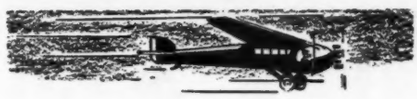
SOUTH LOUISIANA
CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 375 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Drlg. sand 6,323 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Derrick.
Dr. Thomas et al's No. 1 John Hewitt ..... Location.
Vacuum Oil Co.'s No. 1 Wait, Iowa ..... Rig.

CAMERON PARISH

Shell Petroleum Corp.'s No. 2 State, Black Bayou ..... Location.
Shell Petroleum Corp.'s No. 16 Watkins, Black Bayou ..... Building derrick.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Total depth 5,248 ft.; sidetracked to 5,195 ft.; pulling collapsed csg.

"WINGS" for pipe line welding



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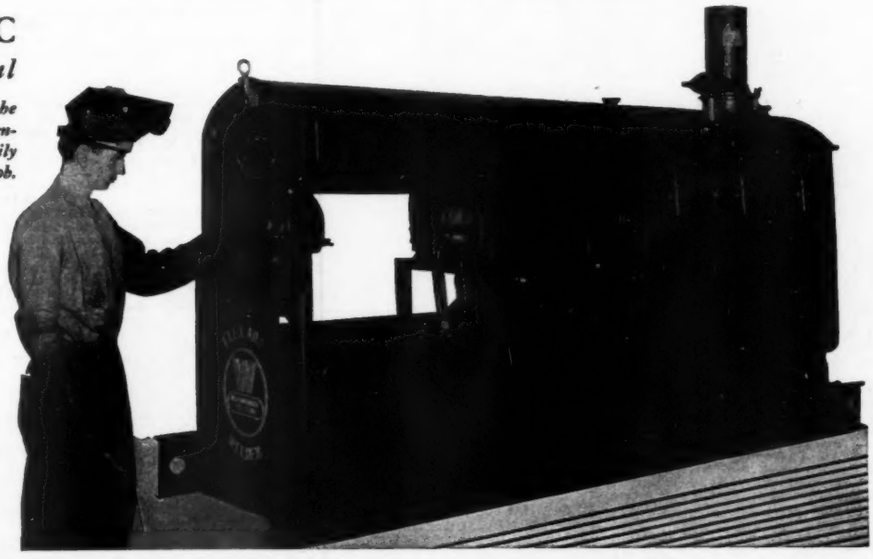

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TUNE IN THE WESTINGHOUSE SALUTE OVER THE N. B. C. NATION-WIDE NETWORK EVERY TUESDAY EVENING.

The Texas Company's No. 6 State, Calcasieu Lake.....Drlg. salt 2,526 ft.
The Texas Company's No. 7 State, Calcasieu Lake.....Location.

IBERIA PARISH

The Texas Company's No. 6 Vermillion Bay .....Driving piling.

IBERVILLE PARISH

Gulf Ref. Co.'s No. 1 Gay, Bayou Choctou .....Drlg. sand 1,282 ft.
Sheil Pet. Co.'s No. 5 Wilbert, White Castle .....Coring sand 5,005 ft.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue .....Derrick.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue .....Drlg. sand 4,539 ft.
Standard Oil Co.'s No. 3 Schming (workover) .....Oil sand 2,301-06 feet.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue....Bldg. derrick.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 2-16s-23e....Abandoned in sand and shale 7,629 ft.

JEFFERSON DAVIS PARISH

H. T. McClain et al's No. 1 Trimble Atterbury, Welsh, Sec. 16-9s-5w .....Rig.
Vacuum Oil Co.'s No. 1 Tietje, Roanoke .....Drlg. sandy shale 1,681 ft.

PLAQUEMINE PARISH

Gulf Ref. Co.'s No. 2 Buras Levee Board .....Rigging up.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille .....Drlg. sandy shale 2,119 ft.
The Texas Company's No. 4 State, Garden Island.....Total depth 4,414 ft.; drlg. sidetracked hole 3,576 ft.
The Texas Company's No. 5 State, Garden Island.....Location.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Jacobs, Sec. 28-11s-4e.....Trying to pull strainer 1,834 ft.

ST. MARTIN PARISH

The Texas Company's No. 3 Iberville Land .....Building derrick.
The Texas Company's No. 4 St. Martin, Hager .....Derrick.
The Texas Company's No. 5 St. Martin, Hager .....Rig.

ST. TAMMANY PARISH

Washington-St. Tammany's No. 2 Caussack, Sec. 5-6s-10e..Gumbo 1,380 ft.; shut down for repairs.

TERREBONE PARISH

Louisiana Gas & Fuel Co.'s No. 9 Minor, Houma.....Drlg. sandy gumbo 2,727 ft.
The Texas Company's No. 1 L.L.&E., Bay St. Elaine.....Derrick.
The Texas Company's No. 5 State, Bay St. Elaine.....Drlg. cap rock showing sulphur 1,012 ft.
The Texas Company's No. 4 State, Caillou Island.....Location.
The Texas Company's No. 5 State, Caillou Island.....Drlg. salt 4,945 ft.
The Texas Company's No. 6 State, Bay St. Elaine.....Location.
The Texas Company's No. 2 State, Dog Lake.....Drlg. salt 6,135 ft.
The Texas Company's No. 4 La. L. & E., Four Isle.....Drlg. hard sand and lime 6,842 ft.
The Texas Company's No. 2 La. L. & E., Bay Junop.....Drlg. sandy shale 6,255 ft.
The Texas Company's No. 6 State, Lake Pelto.....Drlg. sticky shale 102 ft.
The Texas Company's No. 6 State, Lake Barre.....Location.
The Texas Company's No. 7 State, Lake Barre.....Derrick.
The Texas Company's No. 8 State, Lake Barre.....Derrick.
The Texas Company's No. 9 State, Lake Barre.....Location.

VERMILLION PARISH

Pure Oil Co.'s No. 1 Southwest, Louisiana Land Co., Gueydan .....Location.

WEST FELICIA PARISH

Putnam Syndicate's No. 1 Como Plantation, Sec. 51-1e-4w. Total depth 3,738 ft.; fishing stuck drill stem.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 50)

E. S. Price's No. 2 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur. .....T. D. 4,462 ft.; circulating mud.
E. S. Price's No. 3 Weiss, 900 ft. due NE of No. 1 Weiss..Location.
Moody-Seagraves Producing Co.'s and Independent Oil & Gas Co.'s No. 1 Welder, 6,280 ft. from S line, 3,150 ft. from E line of Welder tract, Henry Eyles Sur. .....T. D. 2,780 ft.; drlg.
Cosden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. S and E lines of Sec. 14, Rangley Subd. of C. Miller ranch, Uranga Sur. .....T. D. 4,500 ft.; shut down.
Humble and Hurlbut et al's No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. .....T. D. 5,077 ft.; standing.
The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. .....Location.
Simms Oil Co.'s No. 2 Holzmark, 660 ft. N and 20° E of No. 1, T. York Sur. .....T. D. 1,020 ft.; drlg.
Rowan and Hope's No. 1 Goree, 600 ft. S, 300 ft. W, Lot 4, T. B. Barton Sur. .....Derrick.

BEXAR COUNTY

Eckert & Son's No. 3 J. J. Brehm, 545 ft. from N line, 150 ft. from W line of lease, Sur. No. 58 .....Location.
Gatlin Oil Co.'s No. 2 I. A. Beck, 150 ft. from SE line, 2,551 ft. from SW line of lease, J. Montes Sur. .....Location.
Humble Oil & Ref. Co.'s No. 1 Ernest Lamm, near Elmendorf, southern part of county .....Moving in machinery.
Long and Craig's No. 1 Sandemer .....Location.
J. M. Russell's No. 1 F. L. Price, 1,500 ft. to N line, 660 ft. W of tract in Angel Navarro Sur. .....T. D. 700 ft.; drlg.
Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio .....T. D. 702 ft.; shut down.
Weibacher et al's No. 1 Ernst, 6,400 ft. S line, 900 ft. W line of J. Christopher Sur. .....T. D. 720 ft.; shut down.
Penn Oil Co.'s No. 1 Kosub, 600 ft. N of NE cor. of Cooksey tract, then 700 ft. E on 175-ac. tract, J. Riall Sur. .....T. D. 1,535 ft.; setting csg.
Somerset Syndicate's No. 1 Lagrange, 54 varas from S and W lines of Carrico tract, Sur. No. 48 .....T. D. 375 ft.; shut down.
J. E. Weatherall and Ben C. Hillman's No. 1 Talley ....Location.
Russell and Moore's No. 2 Mills, 20 ft. S of No. 1, Angel Navarro Sur. .....T. D. 1,136 ft.; shut down; repairing rig.
S. M. Terrell et al's No. 1 A. Beadom, 1,100 ft. from E line, 12,000 ft. from N line of John Barber Sur. ....Location.
F. W. Tong's No. 1 Willie Sandemer, 150 ft. from NE and SE lines of the N 20 acres of Willie Sandemer 400-ac. tract, Juan Montes Sur. .....T. D. 700 ft.; ratholing.
Bowman and Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. .....T. D. 1,096 ft.; shut down.

CALDWELL COUNTY

L. H. Wents' No. 1 W. D. Myrick, 150 ft. W of CEL of 118-ac. tract, B. Lockhart Sur. .....Location.
Callihan et al's No. 3 W. H. Callihan, 70 ft. N, 65 deg. E of No. 2 .....T. D. 2,525 ft.; shut down.
Callihan et al's No. 4 W. H. Callihan, 2,000 ft. from N line, 1,945 ft. from W line of tract, John R. Miller Sur. .....T. D. 2,520 ft.; standing.
W. D. Anderson's No. 1 Vickery, 150 ft. from N line, 450 ft. from W line of farm, Damon Sur. .....T. D. 1,873 ft.; drlg.; show oil in Serpentine at 1,833 ft.
Cargil et al's No. 1 Thomas, 1,505 ft. from E line, 150 ft. from NE cor. of A. W. Jordan tract, J. Alberts Sur. .....Rigging up.
Blount and Mills' No. 1 McMahan, 275 ft. from SW line, 75 ft. from SE line of 50-ac. tract, J. Pinchback Sur. .....T. D. 1,730 ft.; drlg.

COLORADO COUNTY

Lewis Siagel Drilling Co.'s No. 1 Henderson, 990 ft. from W line, 2,310 ft. from S line, Sec. 1, Blk. 57, T.&P. Sur. .....Location.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. .....T. D. 600 ft.; standing.

DEWITT COUNTY

Penn Oil Co.'s No. 1 Junker, center N half 20-ac. tract, Pettus Sur. .....T. D. 5,000 ft.; drlg.
H. T. Roe's No. 1 Leinhardt .....T. D. 2,170 ft.; shut down.
A. H. Gibson et al's No. 1 Von Roeder, 750 ft. N line, 200 ft. E line of farm, W. G. Hill League .....T. D. 3,480 ft.; drlg.
Sheldon Petroleum Co.'s No. 1 Goehring, center of Goehring tract, H. Stubblefield Sur. .....Location.

DUVAL COUNTY

S. R. C. Oil Co.'s No. 1 Duval County Land Co., Sur. 280 .....Rigging up.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 .....T. D. 6,575 ft.; drlg.
James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur...Location.
James Dalgish-Morrow's No. 1 Peterson, NW cor. Sec. 82, Blk. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. .....T. D. 4,925 ft.; drlg.

FALLS COUNTY

Marlin Oil Co.'s No. 1 Hodges .....T. D. 2,340 ft.; shut down.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Hupzor .....T. D. 3,100 ft.; fishing drill stem.

GOLIAD COUNTY

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. .....T. D. 2,330 ft.; shut down.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. .....T. D. 4,890 ft.; drlg.
T. B. Slick's No. 1 Poetler, 1,500 ft. from SW line, 900 ft. from SE line of 591-ac. tract, Obid Marshall Sur. .....T. D. 3,390 ft.; drlg.

GONZALES COUNTY

Linden Petroleum Corp.'s No. 1 Hensley, 650 ft. from N line, 1,110 ft. from W line Hensley tract, J. Smith Sur.; reinstated .....T. D. 4,785 ft.; shut down.
Andibus & Cummings' No. 1 R. D. & J. C. Miller, 523 ft. from S line, 1,000 ft. from E line, Ann Williams Sur. .....T. D. 2,550 ft.; shut down.
Acme Oil & Royalty Corp.'s No. 1 H. K. Weber, 2,525 ft. from NW line, 2,250 ft. from SW line, Wright Sur. .....T. D. 2,560 ft.; shut down.
Weal Oil Co.'s No. 1 Martin, 360 ft. SE line and SW line of tract, Thomas Moore Sur. .....Derrick.
United North & South Development Co.'s No. 1 Wells, 450 ft. each way out of NW cor. of Wells tract, Johnson league .....T. D. 4,458 ft.; coring.

GUADALUPE COUNTY

J. S. Suttle's No. 2 A. Baenzinger, 40 ft. E line, 150 ft. S line of tract in the A. O. Mansola Sur., 5½ miles S from Seguin .....T. D. 1,957 ft.; standing.
Ray Oil Co.'s No. 1 R. Felsing, 300 ft. NW line, 450 ft. NE line 120-ac. tract in the M. Baker Sur. .....T. D. 900 ft.; shut down.
J. S. Suttle's No. 1 Wurzbach, 3,750 ft. from NW line, 2,450 ft. from NE line of Young Setton Sur. .....T. D. 1,790 ft.; coring.
O. K. Emerson's No. 1 C. A. Phillips, center of 80-ac. tract, Velda Sur. .....Rigging up.
Jones and Erwin's No. 1 O. Forrester, 2,700 ft. from NE cor., 450 ft. from NW line, O. Forrester tract, Pate Sur. .....T. D. 707 ft.; shut down.
Jones and Erwin's No. 1 Hoese, 150 ft. each way out of NE cor. of 200-ac. tract, J. Leal Sur. .....T. D. 385 ft.; drlg.

HAYS COUNTY

Hailey & Whittington's No. 1 Heidenrich, 4,900 ft. from NW line, 400 ft. from NE line of farm, Hemphill Sur. .....T. D. 1,400 ft.; drlg.
San Marcos Oil & Gas Co.'s No. 1 A. H. Alford .....T. D. 513 ft.; waiting on cement.

JIM HOGG COUNTY

Cole Petroleum Co.'s No. 1 Allen, 150 ft. from W line, 336 ft. from N line, Blk. 7, Sur. No. 23 .....T. D. 2,200 ft.; drlg.
E. E. Watts' No. 1 Gomez, 4,200 ft. to N line, 1,400 ft. to E line of Sur. 125 .....T. D. 1,105 ft.; waiting on cement.
J. D. Pulliam's No. 1 Jones, 1,020 ft. W line, 1,020 ft. S line, Share 5-A Hinojosa Sur. .....T. D. 2,000 ft.; drlg.
P. H. Wilson's No. 1 Edds, Sur. No. 210 .....Rigging up.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Sur. .....T. D. 2,920 ft.; swabbing.
Prairie Lea Prod. Co.'s No. 1 Oppenheimer .....Spudded and shut down.

KARNES COUNTY

J. F. Morrissey et al's No. 1 Rigsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCoull Sur. .....T. D. 2,000 ft.; standing.
J. F. Morrison's No. 1 Cockran, 150 ft. from S line, 500 ft. from E line of tract, D. B. McConnell Sur. .....Location.
Hurlbut et al's No. 1 Newberry, 450 ft. SE and SW line of Newberry 428-ac. tract, Carlos Martinez Sur. ....T. D. 2,975 ft.; show gas.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. .....T. D. 1,110 ft.; standing.
Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur., in the D. L. Richardson Sur., 1 mile NE from Kendalia .....T. D. 900 ft.; standing.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale .....T. D. 2,340 ft.; drlg.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,250 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia .....T. D. 1,600 ft.; shut down.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,488 ft. S line .....T. D. 705 ft.; standing.
Permian Oil Co.'s No. 1 Boles, S.A.&M.G. Ry. Sur. No. 542½ .....T. D. 1,710 ft.; drlg.
Hardy Sitton's No. 1 McMillan, south central part of 180-ac. lease, B. Williams Sur. .....Location.
Abercrombie Oil Co. and Harrison Oil Co.'s No. 1 Kunz, 900 ft. from E line, 1,900 ft. from S line of McCormack Sur. .....T. D. 2,150 ft.; shut down.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. .....T. D. 3,374 ft.; moving in new equipment, sand 3,347-74 ft.; oil and gas.

KINNEY COUNTY

Magnolia Pet. Co.'s No. 1 Whitehead-Wardlaw, 2,640 ft. W line and S line of Melton Valdez grant .....T. D. 4,290 ft.; drlg.
Mardon Oil Co.'s No. 2 Jim Clamp .....T. D. 1,389 ft.; standing.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. .....T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges .....T. D. 260 ft.; standing.

LASALLE COUNTY

Fred W. Vals' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. .....T. D. 40 ft.; standing.

LAVACA COUNTY

Newton Oil Co.'s No. 1 Reeves, cor. of S line of Reeves tract, John Huesser Sur. .....T. D. 3,175 ft.; show gas.

LIVE OAK COUNTY

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay, in the Bridget Fadden Sur., 3 miles E from George West....T. D. 915 ft.; shut down.
Penn Oil Co.'s No. 2 Lyne Bros., 1½ miles SW of No. 1..T. D. 2,250 ft.; drlg.
Houston Oil Co.'s No. 3 Dunning, 330 ft. from NE line and 2,800 ft. from SE line of tract, M. B. Kilvin Sur..Moving in derrick.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. .....T. D. 3,620 ft.; reaming.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. .....T. D. 401 ft.; drlg.

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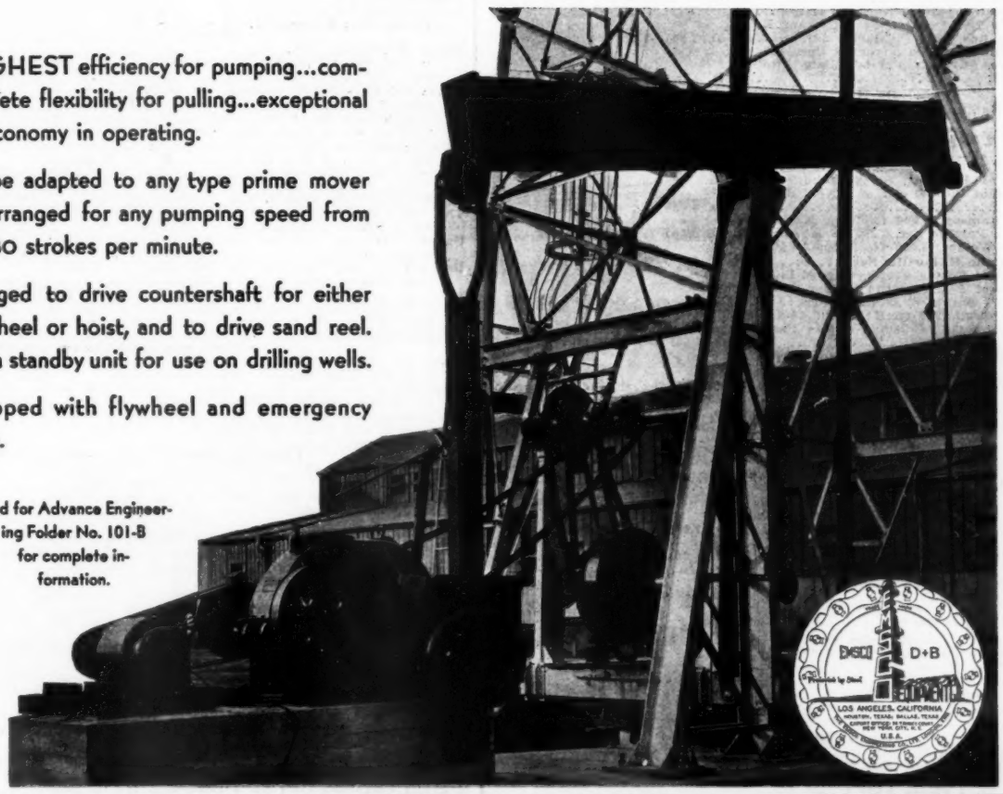

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Sid Keoughan's No. 1 C. E. Terrell, 6,000 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ....T. D. 2,840 ft.; shut down.
Tul-Tex Oil Co.'s No. 1 L. Jacobs, 4 miles from N of Callihan Field ....T. D. 1,440 ft.; standing.

LEE COUNTY

Burt et al's (M. D. Rickett) No. 1 R. C. Sanders ....T. D. 3,124 ft.; shut down.
Marts and others' No. 1 Thomas ....T. D. 1,100 ft.; drlg.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ....T. D. 1,987 ft.; will drill deeper.

McLENNAN COUNTY

C. E. Groone and others' No. 1 League ....T. D. 932 ft.; shut down.
W. L. Murrel and others' No. 1 Hixon ....T. D. 775 ft.; shut down.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ....T. D. 632 ft.; standing.
Sheree, Brodie and Emick's No. 1 Shiner, Henry Brewer Sur. ....T. D. 112 ft.; set 10-in. csg.; show gas 85 ft.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 7, I.&G.N. Sur. ....T. D. 3,552 ft.; fishing.
Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ....T. D. 7,092 ft.; trying to sidetrack junk.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ....T. D. 1,657 ft.; bailing.
Caldwell et al's No. 1 L. W. Burrell ....T. D. 518 ft.; depth corrected.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine ....T. D. 2,775 ft.; shut down.
United North & South Dev. Co.'s No. 1 Little, S from D'Hanis and near S line of county ....T. D. 4,236 ft.; drill stem stuck.

MILAM COUNTY

W. H. Birdwell and others' No. 1 C. H. Coffield, 150 ft. from N line, 150 ft. from W line of 190-ac. farm, I. J. Chambers Sur. ....T. D. 1,415 ft.; waiting on cement.
Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ....T. D. 1,475 ft.; shut down.
Kyser, Ricberts & Dibble's No. 2 Ward ....T. D. 1,500 ft.; shut down.
Lloyd Oil Corp. and H. W. Elliott's No. 1 Davis ....T. D. 1,300 ft.; standing.
G. L. Moore's No. 1 Davis ....T. D. 1,200 ft.; drlg.
Peggie Bros.' No. 1 M. Reed ....T. D. 650 ft.; shut down.
Service Oil & Gas Co.'s No. 1 H. G. Hensiee, 500 ft. from NW line, 400 ft. from NE line of 50-ac. tract, Valdez Sur. ....T. D. 2,180 ft.; drlg.

NUECES COUNTY

Grimm and others' No. 1 Wm. Baur ....Location.
Hale & Hall's No. 1 Koenisch ....Rigging up rotary.
Houston Oil Co.'s No. 1 Comstock, 105 ft. N of C of tract ....T. D. 4,719 ft.; sand; shut down.
Houston Oil Co.'s No. 1 Joe Hunter, 607 ft. from W line, 165 ft. from S line, 75-ac. tract, Sec. 591 ....Location.
Bowen et al's No. 1 Theo Prieur ....Spudded and shut down.
Pearson Properties, Inc.'s No. 1 State National Bank ....T. D. 4,811 ft.; coring.
Calallen Oil & Gas Co.'s No. 2 Allen, 800 ft. from E line, 1,100 ft. from S line, Blk. 76, Garias Sur. ....T. D. 1,887 ft.; shut down.
H. H. Weinert's No. 1 Mohle, 450 ft. from S line, 450 ft. from W line, Sec. 94, Bishop Subd., Palo Alto lands ....T. D. 452 ft.; set casing.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ....T. D. 325 ft.; drlg.

STARR COUNTY

Los Olmos Oil Co.'s No. 2 Kelsey-Bass, Blk. 6, Porcion 77 ....Derrick.

SAN PATRICIO COUNTY

George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neill Sur., Abstract 211 ....T. D. 4,020 ft.; shut down.
Cosden Oil Co.'s No. 1 Ramsey, 3,000 ft. from N line, 4,500 ft. from E line, Portillo Sur. ....T. D. 2,601 ft.; shut down.
Union Prod. Co.'s No. 4 Welder, 3,000 ft. N line, 4,500 ft. E line of tract in the E. Portillo Sur. ....T. D. 5,893 ft.; standing.
C. B. Peterman et al's No. 1 Foster, 150 ft. from E line, 1,420 ft. from N line of Blk. 5 of the Welder-Coleman-Fulton Subd., 2¼ miles W from Sinton ....Location.
Cosden Oil Co.'s No. 1 Powell, 330 ft. E line of 36-ac. tract in Sec. 32, Paul Subd., Coleman-Fulton Pasture Lands ....T. D. 4,532 ft.; standing.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur. ....T. D. 385 ft.; shut down; depth corrected.
Sun Oil Co.'s No. 1 Nagle ....T. D. 892 ft.; drill stem stuck.
Allen et al's No. 1 Sophie Smith ....Building derrick.

UVALDE COUNTY

Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ....T. D. 2,710 ft.; shut down.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomes Sur., 8 miles S of Uvalde ....T. D. 1,610 ft.; shut down.

VICTORIA COUNTY

Newton and others' No. 1 West ....T. D. 1,550 ft.; standing.
The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. ....T. D. 6,201 ft.; drlg. sand.

WEBB COUNTY

Usher Carson et al's No. 2 Benavides, 150 ft. from S and W lines of Blk. 7, Sur. 1,613 ....Location.
O. W. Killam's No. 1 Bruni, 2,490 ft. from E line, 1,170 ft. from S line of Sur. No. 77 ....Derrick.

WILSON COUNTY

Rycade Oil Corp. and Getty Petroleum Co.'s No. 1 J. A. Johnson, 150 ft. from N line, 600 ft. E of railroad tract, Jose de Balmaseda Sur. ....Rigging up.
Stover and Wren's No. 1 John Reuss, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ....T. D. 45 ft.; standing.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ....Rigging up.
John Poppas Pool, Inc.'s No. 1 Flores, 2,977 ft. SE line, 6,000 ft. Rio Grande River, Porcion 35 ....Rigged up.
B. F. Nixon's No. 1 A. Guiterrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant ....T. D. 50 ft.; standing.
O. W. Killam's No. 2 Slator, Borrego grant ....Derrick.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ....T. D. 1,765 ft.; drlg.
William Marks' No. 1 Flores, Blk. 36, Porcion 37 ....Location.
National Oil Co. of Delaware's No. 1 Luther, 617 ft. NW line, 96 ft. NE line, Blk. 97, Da Prom Subd., Porcion 6 ....T. D. 380 ft.; standing.
Mackenzie and Tallmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ....T. D. 300 ft.; drlg.
F. M. Blair & Son's No. 1 Guiterrez, 150 ft. from NW line, 660 ft. from SW line, Blk. 2, Blair Subd., Comitas grant ....T. D. 1,750 ft.; standing.
Lincoln Oil & Gas Co.'s No. 1 Guiterrez, Blk. 23, Subd., La Huerta grant ....T. D. 1,150 ft.; standing.
J. J. O'Hern's No. 1 S. Benavides, 150 ft. from NW line, 150 ft. from NE line, Blk. 10, Fansler Subd., Villa grant ....T. D. 1,425 ft.; drlg.

ZAVALA COUNTY

Ed Anglin's No. 6 La Pryor ....Location.
Carl Cromwell's No. 1 Whitecotton, C of NW Sec. 1, A.P.&M. Sur. ....Location.
Ed Anglin's No. 1 Matthews, 118 varas from S and W lines of Sec. 4, Blk. 2, I.&G.N. Sur. ....T. D. 1,155 ft.; shut down.
Texas Gas Utilities Co.'s No. 2 Pryor, 900 varas W. 1,108 varas S of Anglin's No. 3 Pryor ....T. D. 2,095 ft.; abnd.
F. W. Weigand's No. 1 Gates, 1,320 ft. from N line, 220 ft. from NE cor., Sur. No. 13 ....T. D. 3,215 ft.; shut down.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 50)

The Texas Company's No. 9-A Knoblock, 450 ft. from NE line, 400 ft. from SE line of lease, Robinson Sur. ....Location.
The Texas Company's No. 4 Pauline Roamel, 850 ft. from SE line, 450 ft. from SW line of lease, Hodges Sur. ....T. D. 2,508 ft.; waiting on cement.
The Texas Company's No. 1 Appling, 180 ft. from S line, 450 ft. E of NE cor. of Alexander Sur. in the Hodges Sur. ....T. D. 2,568 ft.; drlg.
Trinity Drillers No. 2-B Penn-Miller, 150 ft. out of SW cor. of lease ....T. D. 800 ft.; drlg.
F. L. Thomson's No. 2 Poser, 25 ft. from NW line, 300 ft. from No. 1 ....Location.

CHAPMAN POOL—WILLIAMSON COUNTY

W. D. Anderson's No. 6-A T. P. Simmons ....Rig up and shut down.
W. D. Anderson's No. 8 M. V. Lawrence ....Location.
Bartlett & Wilson's No. 2 R. E. Stewart ....T. D. 790 ft.; drlg.
Bartlett & Wilson's No. 1 R. E. Stewart ....T. D. 741 ft.; drlg.
Chapman et al's No. "D" 1 Abbott ....Location.
Chapman et al's No. "D" 2 Abbott ....Location.
Chapman et al's No. "D" 5 Abbott ....Location.
Chapman et al's No. "D" 6 Abbott ....T. D. 1,617 ft.; drlg.
Chapman et al's No. D-7 J. C. Abbott ....T. D. 200 ft.; shut down.
Chapman et al's No. "D" 10 Abbott ....Location.
Collins et al's No. 6 Lawrence ....Location.
J. L. Collins & Co.'s No. 7 M. V. Lawrence, 150 ft. from E line, 215 ft. from S line of 27-ac. tract in the S. Miller Sur. ....Csg. setting; shut down for water.
Ertell and others' No. 6 J. C. Abbott ....T. D. 1,730 ft.; drlg. top Serpentine 1,690 ft.
E. E. Ertell's No. 7 J. C. Abbott ....T. D. 700 ft.; drlg.
Horn & Stratton's No. 9 J. C. Abbott, W side of lease, 150 ft. from S line in the S. Miller Sur. ....T. D. 2,000 ft.; drlg.
E. L. Chapman et al's No. 2-A Sides ....Rigging up.
J. L. Collins & Co.'s No. 5 M. V. Lawrence, 150 ft. from W line, 515 ft. from S line of 27-ac. tract, S. Miller Sur. ....T. D. 1,462 ft.; drlg.
McNeal et al's No. 7 Kilgore ....T. D. 1,090 ft.; drlg.
E. C. Mead's No. 1 Abbott, 100 ft. from N and W lines of 6-ac. tract, S. Miller Sur. ....T. D. 2,166 ft.; shut down.
Sequoia Oil Co.'s No. 7 T. P. Simmons ....Location.
G. Stratton's No. 5 J. C. Abbott, 450 ft. from E line, 150 ft. from S line of 32-ac. tract, S. Miller Sur. ....T. D. 1,730 ft.; set csg.

PETTUS AREA—BEE COUNTY

Batex Petroleum Co.'s No. 3 Burnett, 360 ft. from N line, 600 ft. from E line of 320-ac. tract, Kerr Sur. ....Location.
Batex Oil Co.'s No. 2 Burnett, 361 ft. N line, 900 ft. from E line of lease in the south John Pace Sur. ....T. D. 3,708 ft.; shut in.
J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur. ....T. D. 3,734 ft.; shut down for fuel.
Moody-Seagraves Producing Co.'s No. 2 McKinney, 3,340 ft. from E line, 450 ft. from S line, McKinney tract, R. C. Ballard Sur. ....Location.
The Texas Company's No. 2 J. R. Scott, 200 ft. from N line, 150 ft. from W line, J. M. Urango Sur. ....T. D. 690 ft.; shut down.
The Texas Company's No. 3 J. R. Scott, 7,100 ft. from No. 1, SW ....Location.
Union Producing Co.'s No. 13 Ray, George Habbermacher Sur. ....Rigging up.
Union Producing Co.'s No. 26 Ray, 3,500 ft. from S line, 3,000 ft. from E line, P. Miller Sur. ....Location.

AGUA DULCE FIELD—NUECES COUNTY

South Texas Production Co.'s No. 3 Walter, 800 ft. from S line, 460 ft. from E line of Walters tract in Section 34 ....T. D. 1,984 ft.; standing.

SAXET FIELD—NUECES COUNTY

Saxet Oil & Gas Co's No. 3 Donnegan, 2,150 ft. due S of No. 1 Donnegan ....T. D. 6,459 ft.; coring.
Saxet Oil & Gas Co.'s No. 7 Dunn, 2,400 ft. NW and 200 ft. NE of S cor. of Dunn farm ....Derrick.
Moody-Seagraves Producing Co.'s No. 1 Smith, 450 ft. from N and E line of 120-ac. tract, J. Dunn Sur. ....T. D. 3,157 ft.; top sand.
Pearson Properties, Inc.'s No. 1 State National Bank ....T. D. 4,811 ft.; coring.

LION McFADDEN POOL—VICTORIA COUNTY

Lion Oil Refining Co.'s No. 2 McFadden, 1,917 ft. W of NE cor. and 512 ft. at right angles from N line of Edwards Sur., 660 ft. E of No. 1 in the M. J. Travesia Sur. ....T. D. 6,425 ft.; preparing to shoot drill stem.

LAREDO DISTRICT

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 1 Edge-Hahl, 150 ft. from N line, 150 ft. from W line, Sur. ....T. D. 4,090 ft.; drlg.
F. M. Frasher and R. F. Schoolfield's No. 1 Duval Land Co., 990 ft. from N line, 1,320 ft. from W line, Sur. 123 ....T. D. 2,308 ft.; 600 bbls. in 6½ hrs.

RANDADO POOL—JIM HOGG COUNTY

J. W. Pippin's No. 1 Hinnant, 150 ft. each way from SW cor., Blk. 11, Sur. 147 ....Derrick.

KOHLER POOL—DUVAL COUNTY

Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164 ....T. D. 1,731 ft.; drlg.

S. R. C. POOL—DUVAL COUNTY

The Texas Company's No. 1 Duval Ranch, 2,490 ft. S line, 150 ft. W line of Sur. 297 ....Location.

COLE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 4 Benavides, 150 ft. from NE line, 450 ft. from NW line, Blk. 28, Sur. 174 ....T. D. 1,965 ft.
Wilkins Seacord's No. 2 Mulholland, 218 ft. from N line, 1,050 ft. from W line of Sur. 173 ....Drlg. deeper from 2,837 ft.; T. D. 2,890 ft.; drlg.

ROMA POOL—STARR COUNTY

The Texas Company's No. 5-A V. C. de Guerra, 675 ft. from N line, 675 ft. from E line, Share 305, Por. 67, Jurisdiction of Mier ....T. D. 3,725 ft.; drlg.

MID-OJUELOS—WEBB COUNTY

O. W. Killam's No. 2 Garcia, 605 ft. S line, 150 ft. E line, Blk. 43, Los Ojuelos grant ....T. D. 1,850 ft.; waiting on cement.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 ....T. D. 2,618 ft.; drlg.

CHARCO REDONDO POOL—ZAPATA COUNTY

C. R. Moore and J. W. Moore's No. 1 Adela G. de Flores, 330 ft. from NW line, 330 ft. from NE line, Doty Subd. ....T. D. 2,000 ft.; standing.
C. R. Moore and J. W. Moore's No. 2 Adela G. de Flores, 150 ft. from NE line, 150 ft. from SE line, Doty Subd. ....T. D. 150 ft.; standing.

JENNINGS-MARTINEZ-ZAPATA

South Texas Production Co.'s No. 1 Gutierrez, 2,000 ft. from E line, 660 ft. from NW line of Survey 162 ....T. D. 1,733 ft.; comp. 30,000,000 ft. gas.

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JENNINGS-MUCKELROY POOL—ZAPATA COUNTY

Allied Oil & Gas Co.'s No. 12 Guiterrez, 750 ft. from NE line, 2,663 ft. from SE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 100 ft.; standing.
Allied Oil & Gas Co.'s No. 1 D. Bustamente, 361 ft. from NW line, 150 ft. from NE line, Blk. 12, Share 10, Fansler Partition, Comitas grant ..... T. D. 500 ft.; drlg.
Allied Oil & Gas Co.'s No. 13 E. Guiterrez, 150 ft. from NE line, 2,763 ft. from SE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 1,311 ft.; comp. 35 bbls.; sand 1,289-1,311 ft.
J. K. Gibble's No. 1 Trevino, 150 ft. from NE line, 150 ft. from SE line of Blk. 3, Sur. 65 ..... Derrick.
Nordan and Morris and Grimm and Yakey's No. 1 S Bustamente, 990 ft. from NE line, 150 ft. from NW line, Share 34, Fansler Partition, Comitas grant ..... Derrick.
Pal-Mar Oil Co.'s No. 1 Jose Bustamente, 150 ft. from NW line, 150 ft. from SW line, Share 35, Fansler Partition, Comitas grant ..... T. D. 1,333 ft.; dry and abnd.
W. R. Shankle's No. 6 Guiterrez, 1,800 ft. from NE line, 2,989 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... T. D. 1,000 ft.; drlg.
W. R. Shankle's No. 7 Guiterrez, 2,100 ft. from NE line, 2,898 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... Location.
S. R. C. Oil Co.'s No. 1 Cuellar, 150 ft. S and W lines, Block 16, Sur. 62 ..... Location.
S. R. C. Oil Co.'s No. 1 F. Cuellar, 300 ft. from S line, 300 ft. from W line, Blk. 6, Sur. 285 ..... Location.
S. R. C. Oil Co.'s No. 2 F. Cuellar, 300 ft. from S line, 300 ft. from E line, Blk. 8, Sur. 19 ..... Location.
S. R. C. Oil Co.'s No. 10-A Cuellar, 150 ft. from NW line, 150 ft. from SW line, Blk. 10, Sur. 65 ..... Spudded.
S. R. C. Oil Co.'s No. 9-B Cuellar, 660 ft. from SW line, 150 ft. from SE line, Blk. 7, Sur. 65 ..... T. D. 200 ft.; drlg.
S. R. C. Oil Co.'s No. 3-C (12-B) Trevino ..... Location.
Whicker, Arnold & Ahler's No. 3 Garza, 150 ft. from SW line, 450 ft. from SE line, Blk. 1, Zorro Ranch Subd., Comitas grant ..... Rigging up.
J. H. Winch's No. 2 A. Bustamente, 450 ft. from NW line, 150 ft. from NE line, Blk. 7, Share 5, Fansler Partition, Comitas grant ..... T. D. 1,000 ft.; drlg.

JENNINGS-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Slator, Blk. 1, Slator Pasture, Borrego grant ..... Spudded.
O. W. Killam's No. 32-B Cuellar, Sur. 277 ..... T. D. 1,565 ft.; comp. 75 bbls. in sand 1,558-65 ft.
O. W. Killam's No. 34 "B," Sur. 277 ..... Location.
O. W. Killam's No. 35 "C," Sur. 278 ..... Location.

MIRANDO VALLEY POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Lopez, 181 ft. from W line, 150 ft. from S line, Blk. 16, Sur. 251 ..... T. D. 2,222 ft.; drlg.

OKLAHOMA FIELDS

(Continued from Page 44)

Petroleum Co., Empire Oil & Refining Co., Independent Oil & Gas Co., Margay Oil Corp., Skelly Oil Co., and Deep Rock Oil & Refining Co.

Wildcats in Kay County

Kay County is active with several wildcats. Summit Drilling Co. and others' No. 1 Hayes, NW cor. NE NW, Section 24-28-3, was spudding. It is located on a block of semiproven acreage 1½ miles east of the Arkansas River, and the same distance from the nearest oil production in the area, which is the Carter Oil Co.'s No. 1 Hayes, in Section 15-27-3, the first well to produce from the Bartlesville sand in the county, at a total depth of 3,100 feet. This well made 2,600 bbls. on its initial gauge in 1918 and is still making around 30 bbls. a day, on the pump. Continental Oil Co.'s No. 1 Fruits, NE cor., Section 3-25-2w, Kay County, was completed as a combination oil and gas well. Boucher Oil Co.'s No. 1 Jefferson, NE cor. SW, Section 32-26-1w, a wildcat, was fishing at a total depth of 1,210 feet. Mummert Drilling Co.'s No. 1 McCormick, NW cor. SE, Section 9-27-2, another wildcat, was spudding.

Two new locations were announced during the week in Kay County, one, J. S. Pine's No. 1 Ogg, SW cor. SE, Section 35-25-1w, in the southern part of the county near the Tonkawa Field. Lewis Oil Co.'s No. 1 Harris, SE cor. SW, Section 14-25-1, was a location made during the week.

Stephens County

In the new producing area southeast of Comanche, in Stephens County, two producing wells were being completed and others were cementing casing on top of the pay, near 1,500 feet. Several recent lease transactions in the area include the NE NE Section 34-2s-7w, to W. W. Woodwarth, and SE SE Section 17-1-7w, Stephens County, sold to H. Hanbury. Carter Oil Co.'s No. 1 Toney, NW cor. NE SW Section 27-2s-7w, is being estimated at 175 bbls. a day from sand at 1,494-1,505 feet. The Texas Company's No. 1 Toney, SE cor. SW NW Section 27-2s-7w, is estimated at 75 bbls. per day on the pump. The sand was found at 1,498-1,504 feet. The tests waiting for cement were G. Pace's No. 1 Toney, SW cor. SE NW Section 27-2s-7w, which had landed casing on top of the pay horizon at 1,502-06 feet; same operators' No. 4 Dilly, NW cor. NE NW SW Section 27-2s-7w, is preparing to test sand at 1,498-1,503 feet, after plugging back a few feet to shut off water. F. Jones and others' No. 1 Toney, SW cor. NW SE Section 27-2s-7w, was abandoned as a dry hole at a total depth of 2,051 feet.

Other tests in the area were W. O. Smythe and others' No. 1 House, SE cor. SW NW Section 29-2-8w, Stephens County, drilling at 3,327 feet; Dixie Oil Co. and McMan Oil Co.'s No. 3 Potts, Section 3-2s-8w, a wildcat between the Comanche and Empire Fields, drilling at 2,190 feet; Empire Oil & Refining Co.'s No. 2 Miller, SE cor. NE NE NE Section 5-2s-8w, an old producer in the Empire Field, drilling deeper at 2,017 feet; L. Sikes' No. 1 Kirk, NW cor. SE Section 16-1s-8w, a wildcat drilling at 3,050 feet.

In the Cement Field

Magnolia Petroleum Co. was completing another producer in the Cement Field in Caddo County. Leasing continues active in the wildcat areas in Caddo County. Magnolia Petroleum Co.'s No. 4 Medrano, NE cor. SW Section 36-6-10w, in the Cement Pool, in Caddo County, was showing for 30 bbls. a day from sand at 3,260-80 feet after plugging back from a total depth of 3,500 feet. Same company's No. 8 Lindsey, NE cor. NW SE Section 36-6-10w, a recent completion on the northwest edge of the field, was swabbing 160 bbls. a day from sand at 3,385-92 feet. Magnolia Petroleum Co.'s No. 3 White, SW cor. SE Section 25-6-10w, was preparing to test sand at 3,065-3,100 feet. The test was drilled to a total depth of 5,032 feet, where it was dry. Mid-Kansas Oil & Gas Co.'s No. 2 Gregory, SE cor. NE SW Section 31-6-9w, was testing a sand at 3,232-47 feet after plugging back from a total depth of 4,523 feet. Empire Oil & Refining Co. has been buying considerable checkerboard acreage in the outlying parts of the county, and several other major oil companies have been buying acreage.

Oklahoma City Completions

The following wells were completed in the Oklahoma City Field during the week ending November 29. The field now has 660 completed wells and several others are expected to be completed in a few days, 20 wells are drilling below 6,300 feet. Indian Territory Illuminating Oil Co.'s No. 1 Fox, SW cor. NE SW, Section 14-11-3w, flowed 1,627 bbls. in eight hours from sand at 6,280-6,623 feet. Same company's No. 2 Ivanhoe, SW cor. NE NE, Section 15-11-3w, flowed 94 bbls. in 15 minutes from sand at 6,345-6,600 feet. Same company's No. 1 Webber-Hall, SE cor. NW SW, Section 14-11-3w, flowed 1,041 bbls. in seven and one-half hours from sand at 6,350-6,550 feet. Russell Petroleum Co.'s No. 1 fee, NW cor. NE, Section 2-11-3w, made 383 bbls. in 25 minutes from sand at 6,170-6,643 feet. Gas was estimated at 30,000,000 feet a day. Phillips Petroleum Co.'s No. 1 King, NE cor. SW, Section 10-11-3w, flowed 5,410 bbls. in two and one-half hours from sand at 6,346-95 feet. Hall & Briscoe's No. 7 Holmes, NE cor. NW SE, Section 10-11-3w, made 4,215 bbls. in two and one-half hours from sand at 6,290-6,450 feet. Skelly Oil Co.'s No. 1 Harper-Turner, CEL NE NE, Section 3-11-3w, made 2,375 bbls. in one hour from sand at a total depth of 6,308 feet.

Greater Seminole Production

The production of the Greater Seminole area in the week ending November 24 averaged 199,421 bbls. per day from 2,866 wells. The first 12 pools listed below comprise what is known as the Seminole Field. The 1,877 wells in these pools averaged 133,529 bbls. per day.

Pool—	Wells	Bbls.
Little River	372	23,857
East Little River	84	10,778
Carr City	74	11,571
Maud	134	3,002
Mission	92	7,027
Bowlegs	279	13,272
Earlsboro	282	16,636
South Earlsboro	27	8,651
East Earlsboro	160	16,806
Seminole	255	13,707
East Seminole	33	1,953
Searight	85	6,269
Allen	274	12,230
Asher	26	378
Wanette	50	13,731
Konawa	105	12,974
Sasakwa	51	4,528
St. Louis	843	21,551
Total	2,866	199,421

Greater Seminole Shipments

The pipe line shipments from the Greater Seminole area totaled 183,944 bbls. for the week ending November 24. The daily averages from the various pools were as follows:

Company—	Seminole bbls.	Asher, Pearson, St. Louis bbls.	Konawa bbls.
Barnsdall	2,075	.....	.....
Champlin	3,650	.....	640
Consolidated	.....	3,664	.....
Cosden	7,147	.....	2,536
Deep Rock	2,158	1,776	.....
Empire	6,527	.....	.....
Gulf	16,554	4,155	248
Magnolia	7,507	5,979	.....
Oklahoma	20,263	125	100
Prairie	10,127	3,291	3,582
Prod. & Ref.	1,948	.....	.....
Pure	6,897	.....	.....
Shell	5,061	163	652
Stanolind	25,798	6,162	3,005
Texas	8,119	5,079	2,477
Tidal	8,464	3,896	.....
White Oak	327	.....	.....
Total	132,622	32,390	13,240
Tank cars	2,609	3,083	
Grand total	135,231	35,473	

Oklahoma City Oil Shipments

The total shipments from the Oklahoma City Pool for the week ending November 24, were 615,230 bbls., a decrease of 106,547 bbls. from the previous week. The daily average shipments by companies were as follows:

Company—	Bbls.*
Empire	26,217
I.T.I.O.	4,435
Magnolia	11,909
Oklahoma	16,302
Prairie	7,363
Stanolind	15,702
Shell	2,690
Tidal	1,671
Champlin	1,601
Total	87,890

*Daily average.

Oklahoma City Production

The following wells were on production during the seven days ending November 24, in the Oklahoma City Pool, under the proration orders. All other wells were shut in and will be opened and produced according to the curtailment plan.

	S.T.R.	Wells	Bbls.
Anderson-Prichard:			
Gibbons	1-11-3w	4	115
Graham	2-11-3	1	52
Habegger	14-11-3	1	122
Key	2-11-3	1	120
Moore	2-11-3	1	225
Peat House	2-11-3	2	619
Roosevelt Place	2-11-3	5	1,816
Brown et al	14-11-3	1	1,221
Blackstock et al:			
Harvey	15-11-3	1	409
Blackwell:			
Clemer	10-11-3	1	1,401
British American:			
Eckroat	10-11-3	1	810
Coline:			
Clout	25-11-3	16	735
Olds	24-11-3	10	468
Warren	18-11-2	8	251
Continental:			
Sudik	6-10-2	4	259
Cromwell-Franklin:			
T. Park	13-11-3	31	5,572
Denver P. & R.:			
Harvey	15-11-3	1	1,089
Whitten	14-11-3	1	409
Hall-Briscoe:			
Holmes	10-11-3	4	1,842
Lindsey	14-11-3	3	708
Heenan-Coe:			
Cunningham	1-11-3	3	290
I. T. I. O.:			
Barker, Drake	14-11-3	1	972
Bod. Anderson	30-11-2	3	12
Bodine, A.	24-11-3	6	355
Bodine, S.	30-11-2	3	19
Brokaw, A.	13-11-3	4	25
Brokaw, C.	13-11-3	4	32
Button	19-11-2	5	118
Carrico	14-11-3	5	674
Coppinger	11-11-3	8	703
Corff	11-11-3	5	539
Drake	14-11-3	2	1,008
Eacock	11-11-3	2	99
Emmerson, N.	30-11-2	11	83
Farley, L.	19-11-2	4	268
Ferndale, Comm.	11-11-3	5	1,289
Fox	14-11-3	1	232
Funk	11-11-3	1	304
Habegger	14-11-3	2	586
Holmes-Gray	14-11-3	1	167
Ivanhoe	15-11-3	2	178
Johnson	25-11-3	9	285
Jones, H. W.	1-11-3	4	1,121
Jones	31-11-2	14	1,468
Jones, Comm	1-11-3	4	2,087
Knox, May	14-11-3	4	674
K. Henning	24-11-3	3	4
Lawrence Place	15-11-3	3	673
Lemmon	11-11-3	2	115
M. K. & T.	35-12-3	4	512
Mt. Vernon Heights	15-11-3	1	56
Okla. State Land	36-11-3	8	426
Peterson, Sad	25-11-3	8	782
Phelans	15-11-3	2	8
Phillips	1-11-3	1	391
Precure, A.	11-11-3	-	402
Rensimer	14-11-3	1	118
Salasman	32-11-2	5	17
Speegie et al	24-11-3	3	263
Sudik	31-11-2	11	2,615
Theimer, E.	12-11-3	8	1,127
Trosper	13-11-3	10	565
Trosper, Clar.	14-11-3	4	971
Trosper, E.	14-11-3	2	1,148
Trosper, H. G.	14-11-3	6	1,196
Trosper, L.	12-11-3	2	368
Unsell, M.	23-11-3	6	404
Unsell-Krager	23-11-3	3	1,165
Viewpoint	10-11-3	2	615
Wheeler	13-11-3	3	272
Wilkie-Ander.	25-11-3	3	18
Williamson, Can.	24-11-3	2	1
I. T. I. O. et al:			
Boulevard, Add.	14-11-3	1	50
Kedberg:			
Bures	2-11-3	1	130
Mabee:			
Rusty	10-11-3	1	368
Schilling	10-11-3	1	914
Mid-Kansas:			
Browning	18-11-2	2	12
Fortson	24-11-3	5	47
Mollman	23-11-3	4	611
Trosper, D. B.	19-12-1	1	175
Minnehoma:			
Pugh	2-11-3	1	1,135
Phillips:			
Jones	1-11-3	1	55
King	10-11-3	1	773
Rallen	2-11-3	1	179
Roden	2-11-3	1	392
Prairie-Slick:			
Hiddleston	19-11-2	7	231
Sigman	32-11-2	7	458
Shaffer, J. C.:			
Childs	14-11-3	1	148
Shell:			
Egermeir	23-11-3	1	109
Petty	30-11-2	7	16
Sinclair:			
School Land No. 54	36-11-3	16	1,328
School Land No. 67	36-11-3	4	483
Stamper	30-11-2	6	122
Vencl	31-11-2	16	2,355
Sinclair-Amerada:			
Kinter	30-11-2	10	27
Sinclair:			
Donnell	23-11-3	1	157
Skelly:			
Dunn	1-11-3	1	398
Fields	10-11-3	1	383
Skelly et al:			
Ainsworth	10-11-3	4	319
Hoops	31-11-2	8	189
Tanner	10-11-3	2	799
Slick, T. B.:			
Classen	2-11-3	3	394
Classen-Edwards	3-11-3	1	1,155
Daugherty	2-11-3	1	77
Foote	2-11-3	2	633
Frost, C. G.	10-11-3	1	175
Gleason	1-11-3	1	751
Glidden	13-11-3	2	119
Moore	2-11-3	1	103
Thornton	15-11-3	1	492
Trumbley	2-11-3	1	85
Slick et al:			
Alexander	2-11-3	2	74
Atkinson	1-11-3	2	1,034
Baker	1-11-3	5	916
Danreuther	2-11-3	3	131
Page	14-11-3	2	55
Houghton	1-11-3	1	241
Miller	2-11-3	1	327
Milner	1-11-2	2	235
Storie	2-11-3	1	739
Townsend	1-11-3	2	1,054
Zerkerle	13-11-3	1	165
Carter	1-11-3	1	309

(Continued on Next Page)

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	S.T.R.	Wells	Bbls.
Hoops	31-11-2	8	438
Slick-I. T. I. O.:			
Houston	2-11-3	1	34
Wirt Franklin:			
Holder	2-11-3	2	347
Lowery	12-11-3	10	1,418
Page	35-12-3	5	503
Thelmer	2-11-3	12	5,601
Thelmer-Butt	11-11-3	1	379
Wright	2-11-3	3	140
Total		649	77,037
Last week		643	86,903

New wells, 7; dry and abandoned, 1; decrease, 9,866 bbls.; average per well for pool, 119 bbls.

Caddo County

Carter Oil Co.'s No. 1 Melton, C NW SE, Section 26-6-10w, is rigging up to deepen from 3,511 feet.

Carter County

Magnolia Petroleum Co.'s No. 8 E. Lewis, NE cor., Section 23-1s-3w, Tatum Pool, has been completed for 540 bbls. in sands 2,170-2,240 feet and 2,290-2,340 feet. Carter Oil Co. and others' No. 1 J. Hooks, NW cor. SE NE, Section 24-1s-3w, has been completed for 1,642 bbls. in sand 1,910-2,072 feet. Magnolia Petroleum Co.'s No. 1 Harman, NW cor. SW, Section 28-1s-2w, has been abandoned at 4,350 feet.

Cotton County

Gilbert & Lowery's No. 1 Forney, C SE SE, Section 4-2s-11w, is a rig.

Creek County

Curtis Oil Co. and others staked location for No. 1 Oak, NW cor. SE, Section 26-19-9. C. G. Tibbens Oil & Gas Co.'s No. 4 Water, C SE SE, Section 6-14-9, is rigging up. J. B. Grieves' No. 8 Lowe, SW cor. SE NE NE, Section 13-19-8, has been completed for 200 bbls. in sand 2,112-39 feet, total depth 2,151 feet. C. O. Buckles and Tulsa Oil Co.'s No. 2 Morgan, NE cor. NW, Section 14-19-9, has been completed for 25 bbls. in sand 1,225-34 feet, total depth 1,247 feet. Phillips Petroleum Co. and Gled Oil Co.'s No. 1 Hollingsworth, NE cor. SE SE, Section 20-19-9, made 275 bbls. in sand 2,150-89 feet. O. M. Irelan and others' No. 2 Baker, SE cor. SW, Section 11-17-10, is dry and abandoned at 2,565 feet. C. G. Tibbens Oil & Gas Co.'s No. 3 Water, C SW SE, Section 6-14-9, has been completed for 500,000 feet of gas in sand 985-92 feet.

Grady County

Badgett & Cooper's No. 1 Noah Berry, CNL N half NW, Section 25-4-8w, has been completed in sand 1,871-1,908 feet, gauging 5,500,000 feet of gas.

Jefferson County

Brown & Gouin's No. 1 Cox, SW cor. NW NE, Section 35-7s-6w, is drilling at 330 feet.

Lincoln County

The Texas Company and H. F. Wilcox Oil & Gas Co.'s No. 1 School Land, NW cor. SW NW, Section 36-14-6, is dry and abandoned at 4,265 feet.

Marshall County

Mutual Oil & Gas Co.'s No. 1 Sharp, NW cor. SE SE NW, Section 3-5s-6, is drilling at 390 feet. J. C. Doss and others' No. 1 Taliaferro, NW cor. SW NE, Section 4-6s-6, has been abandoned at 840 feet.

Okfuskee County

Atlantic Oil Production Co.'s No. 4 Fisher, SW cor. NW SE, Section 36-12-10, is an old well drilling deeper at 3,120 feet. Mid-Continent Petroleum Corp.'s No. 2 Dolly Dindy "A," SW cor. NW NE, Section 31-11-11, is drilling deeper at 3,070 feet. Tulsa Oil Co.'s No. 1 Davis, SE cor. NW SW, Section 3-12-9, has been abandoned at 4,085 feet.

Okmulgee County

Jenkins & Dodge and others' No. 1-A Cousino, NE cor. SW, Section 2-15-12, is rigging up. Clarmont Oil Co.'s No. 1-A Lewis, CEL NE NW, Section 12-15-12, is a machine rigging up. McDonald and others' No. 1 Wolfe, SE cor. NE, Section 24-16-13, has been completed for 75 bbls. in sand 1,650-51 feet. Kirkland & Son's No. 3 B. Long, C NE NE, Section 18-15-13, is drilling at 1,800 feet. Denton & Marshall's No. 1-A M. Woffard, NE cor. SW SW, Section 5-14-14, is a machine. Jordan and others' No. 2 A. Golden, SW cor. NE SE, Section 28-12-14, has been completed for 250,000 feet of gas in sand 765-80 feet.

Osage County

Bacon & Voyles' No. 8, SW cor. NW SW, Section 30-23-9, is cleaning out at 486 feet. Oliphant & Boston Heights Oil Co.'s No. 4, NE cor. SE, Section 10-21-8, is drilling at 150 feet. Indian Territory Illuminating Oil Co.'s No. 437, NW cor. SE SE SW, Section 30-25-8, drilled to 1,787 feet in sand topped at 1,786 feet and was completed for 750,000 feet of gas. A. G. Oliphant's No. 3, NW cor. SE NE, Section 10-21-8, made 15 bbls. in Red Fork sand 2,354-2,422 feet.

Pawnee County

Magnolia Petroleum Co.'s No. 3 Newell, NE cor. SW SW, Section 2-20-6, is dry and abandoned at 3,080 feet. Glass and others' No. 2 McCollum, NW cor. SE NW, Section 14-20-9, gauged 1,500,000 feet of gas in sand 920-50 feet. Hay and others' No. 1 Wails, SW cor. NE NE, Section 14-20-9, is dry and abandoned at 2,885 feet.

Payne County

Magnolia Petroleum Co.'s No. 2 Groves, SE cor. NW, Section 27-19-4, is an old well rigging up to deepen from 3,461 feet.

Pottawatomie County

Gypsy Oil Co. moved the rig in for No. 3 Horn, SE cor. NW NE, Section 23-6-3, West Asher Pool. Deep Rock Oil Corp. made location for No. 5 Gibson, NE cor. SW NE, Section 23-6-3. Donahue & Pearson staked location for No. 1 Farley, NW cor., Section 25-6-3. Deep Rock Oil Corp.'s No. 4 Gibson, SE cor. SW NE, Section 23-6-3, has been completed for 2,720 bbls. in sand 3,380-3,405 feet.

Seminole County

Mid-Co Oil Co. and Atkins' No. 1 Lasley, NE cor. NW, Section 15-9-8, is an old well being prepared to deepen from 4,526 feet. Harris and others' No. 1 Davis, NW cor., Section 28-6-6, Konawa Pool, has been completed for 100 bbls. in Simpson dolomite 3,655-3,715 feet. Magnolia Petroleum Co.'s No. 2 Billington, SE cor. NW, Section 29-6-6, flowed 521 bbls. from sand 2,964-75 feet. Crosbie & Moran's No. 1 Fleet, SW cor. NE, Section 11-6-7, has been abandoned at 4,705 feet. Pure Oil Co.'s No. 1 Tiger, SW cor. NE SW, Section 3-8-5, Carr City Pool, flowed 3,520 bbls. from Wilcox sand 4,142-51 feet.

Stephens County

Carl Wiley's No. 1-A Gilmore, SW cor. NE SE NE, Section 10-2s-5w, drilled to 1,074 feet, plugged back to 875 feet and is bailing. Smythe and others' No. 1 House, SE cor. SW NW, Section 29-2-8w, has been abandoned at 3,049 feet. Floyd Jones and others' No. 1 Toney, SW cor. NW SE, Section 27-2s-7w, has been abandoned at 2,051 feet. Carl Wiley's No. 1 Spiegel, SW cor. NE NE, Section 10-2s-5w, is pumping 8 bbls. from sands 848-921 feet.

Grant County

Bu-Vi-Bar Petroleum Corp. and Amerada Petroleum Corp.'s No. 1 Hurst, C SW, Section 25-26-5w, has been abandoned at 5,877 feet.

Kay County

Blankenship and others' No. 1 Hansen, SW cor. NW SW, Section 17-27-2, was completed for 30 bbls. in sand 3,586-3,616 feet after plugging back to 3,612 feet.

Latimer County

P. English and others' No. 1 Weaver, C NW SE, Section 16-6-19, is a rig. Limestone Oil & Gas Co.'s No. 1 Murray, NE cor., Section 21-5-18, is dry and abandoned at 2,763 feet.

Logan County

Eason Oil Co. and others' No. 1 Katchor, SW cor. NE SW, Section 34-17-4w, made 340 bbls. in Layton sand 4,918-39 feet.

Muskogee County

J. P. Flannigan moved a machine in for No. 1 Sanders, SW cor., Section 18-15-19. J. A. Evans and others' No. 1 Sango, CNL SW SE, Section 18-14-18, is a machine. J. W. McQuon and others' No. 1-A W. Smith, NE cor. SW NW NW, Section 6-14-10, is a machine. Braman Oil Co. has a machine on the location for No. 1 J. Jackson, CEL SE NW, Section 17-13-16. Taylor & Geiger's No. 1 M. Johnson, SW cor., Section 9-15-15, is dry and abandoned at 857 feet. P. Boyle and others' No. 2 E. Ware, NW cor. SE NE, Section 14-15-15, has been completed for 5 bbls. in sand 1,428-52 feet. J. W. Patton's No. 1 B. Robinson, NE cor. SW, Section 30-15-19, has been abandoned at 1,120 feet. C. Allred and others' No. 1 R. Drew, NW cor. SW NE, Section 17-13-16, gauged 4,000,000 feet of gas from sand 2,037-41 feet.

Noble County

Empire Oil & Refining Co.'s No. 2 Fraler, SW cor. NE, Section 4-20-1w, is rigging up. Magnolia Petroleum Co.'s No. 2 Weeder, SW cor. NW NE, Section 22-21-2w, is dry and abandoned at 5,300 feet. Twin State Oil Co.'s No. 1 Trussell, NE cor. SW, Section 4-20-1w, has been completed for 14,000,000 feet of gas in sand 3,397-3,450 feet.

Oklahoma County

Phillips Petroleum Co. made location for No. 1 Johnson, Block 20, Lot 41, Central Addition, SE cor. NW SW SE, Section 3-11-3w, Oklahoma City Pool. Anderson & Prichard and Phillips Petroleum Co. staked location for No. 1 Hathaway, Block 22, Lot 14, Terrace Lawn Addition, SW cor. SE NW NE, Section 10-11-3w. Indian Territory Illuminating Oil Co. and others' No. 5 M. K. & T. Ry., SW cor., Section 35-12-3w, has been completed for 2,481 bbls. in 8 hours in sand 6,240-6,388 feet. Anderson & Prichard's No. 1 Roosevelt Place, NE cor. SE NE, Section 2-11-3w, flowed 6,886 bbls. from sand 6,090-6,305 feet. No. 2 Roosevelt Place, SE cor. NE NE, Section 2-11-3w, made 10,441 bbls. in 16 hours from detrital sand 6,070-6,626 feet. No. 5 Roosevelt Place, SE cor. NW NE, Section 2-11-3w, has been completed for 2,278 bbls. in 8 hours in sand 6,460-6,505 feet. Phillips Petroleum Co.'s No. 1 Rallen, NW cor. SW NW SW, Section 2-11-3w, had detrital sand 6,270-6,337 feet and flowed 2,431 bbls. in 8 hours. No. 1 Velt, NE cor. NW NE NE, Section 2-11-3w, has been completed for 8,477 bbls. in 16 hours from sand 6,340-6,443 feet. Thomas B. Slick estate and others' No. 1 Houston, SW cor. NE SW, Section 2-11-3w, made 5,929 bbls. in 16 hours producing from sand 6,360-6,505 feet. Anderson & Prichard and others' No. 1 Brown and others, SW cor. NW, Section 14-11-3w, made 13,285 bbls. in detrital sand 6,300-6,610 feet. Indian Territory Illuminating Oil Co. and others' No. 1 Fox, SW cor. NE SW, Section 14-11-3w, had sand 6,280-6,623 feet and made 4,881 bbls. Thomas B. Slick estate's No. 1 Thornton, NE cor. SE, Section 15-11-3w, has been completed for 8,851 bbls. in 16 hours in detrital sand 6,365-6,542 feet. Indian Territory Illuminating Oil Co. and others' No. 7 Johnson, NE cor. SE NW, Section 25-11-3w, has been completed for 487 bbls. in 9½ hours from sand 6,460-6,500 feet.

Pittsburg County

Gains Creek Gas Co.'s No. 1 F. Smith, SE cor. SW NE, Section 5-8-16, made 200,000 feet of gas from sands 1,658-80 feet and 2,025-41 feet. Central State Light & Power Co.'s No. 1 Hyston, NE cor. SW SE, Section 9-7-18, has been completed for 2,000,000 feet of gas in sand 1,730-1,892 feet.

Wagoner County

J. H. Striker's No. 4 R. Prince, NE cor. SW, Section 29-18-16, is rigging up. Brashears and others' No. 1 Watson, SE cor. SW NE, Section 31-18-17, is rigging up. A. W. Swift and others moved a machine in for No. 1 Shockley, SE cor. SW, Section 27-17-16. R. L. North's No. 1 Roberts, NE cor. NW NE, Section 6-17-17, is spudding. C. D. Bradley and others' No. 1 Jacobs, NE cor. SE NW, Section 7-15-17, is a machine. Boyd Martin and others' No. 1 Owen, SW cor., Section 30-19-15, is dry and abandoned at 1,260 feet. Western D. & E. Co.'s No. 7 Barnett, NW cor. SW NE, Section 34-18-17, has been abandoned at 311 feet. A. H. Secrist's No. 3 Barnett, NE cor. NW SE NW, Section 34-17-16, is a dry hole at 950 feet. J. L. Dixon and others' No. 4 J. Brown, C SW NW, Section 36-16-17, has been completed for 15 bbls. in sand 862-79 feet. J. P. Flannigan's No. 1 A. Cochran, NE cor., Section 17-16-19, has been abandoned at 1,172 feet.

Woods County

Sinclair Oil & Gas Co.'s No. 1 Share, C NE SW, Section 33-27-16w, has been abandoned at 7,280 feet.

SOUTHWEST TEXAS FIELDS

(Continued from Page 50)

completed last week. There are now 225 wells and, unofficially before it is all figured up, it is expected the field will run somewhere around 160,000 bbls. daily as the potential. It will be prorated to 30,000 bbls. daily.

Late in the week The Texas Company was completing its No. 4 Pauline Roamel in the field and it looked like a big well. It was swabbing over 2,000 bbls. daily.

Humble abandoned its No. 2-A Dowdy at 2,654 feet. It topped the Edwards at 2,645 feet and was out of bounds of the field.

Wells that have attracted attention due to depth of showings include Mills and others' No. 1 McMahan in Caldwell that blew out with 3,000,000 feet of gas at 950 feet. It is now down 1,730 feet and drilling. That amount of gas is rather unusual along the Balcones Fault east of San Antonio.

Linden Petroleum Co. is shut down in Gonzales at 4,785 feet in No. 1 Hensley and North & South's No. 1 Wells in Gonzales County is drilling at 4,458 feet. They are the two deepest tests along the fault country at this time.

In Lee County, A. H. Wheeler and associates are back on the job on No. 1 fee with a new rig and have resumed drilling. The first rig was moved off which gave the impression to scouts the test was abandoned and it was so reported by some. It will be carried to the Edwards lime according to the owners. It is now below 1,800 feet.

West of San Antonio along the Balcones there should be a test soon of the Permian Basin (independent operator) No. 1 Whitehead, total depth 5,560 feet. It started running casing in the hole but the derrick was old and would not sustain the weight and some delay was necessary while strengthening the derrick. It has had a good showing and deserves being watched about the time when it is tested.

Darst Creek for the week ending November 25 ran 32,705 bbls. and Pettus in Bee County for the same week ran 8,255 bbls. In each instance it is close to the allowable figure with 34 wells in the Pettus Field and 233 in the Darst Creek Field. In Pettus Field the two townsite wells of the Glasscock Brothers which made gasoline are not included in the figure. They are good for 40 bbls. a day.

Trinity Drillers and Texas Utility Oil Co. have made a location in Jackson County for No. 1 Hungerford in the Henry Smith Survey, 3 miles east of the Edna gas field on a block of 7,000 acres. It is to be a 4,500-foot test.

In Karnes County Fort Bend Oil Co. is having a hard time with No. 1 Newberry in the southern point of the county and only several miles north of the Pettus Field in Bee, but is likely to make a well. It tested a lot of gas in the first instance on drill stem test but when casing was set failed to produce. After considerable work the company milled through the casing and set a new string of smaller casing and last reports were it came in gas again but sanded up and is being cleaned out.

LA.-ARK. FIELDS

(Continued from Page 48)

opened and allowed to clean itself of water, will run around 2,000,000 feet of gas daily. J. M. Bridges and others have made location in the NE NE Section 16-10-11, 8 miles northeast of Pleasant Hill production, for No. 1 Cook. J. W. Clark and others are arranging to make a deep test, 4,000 to 5,000 feet, of No. 1 Tidwell in the NW NW Section 22-13-14, southeast of Holly production, now shut down at 2,084 feet after shows of oil and gas at 2,933 and 2,950 feet tested dry. Keatchie Oil & Gas Co.'s No. 1 Smith, SE SE Section 31-14-15, north of the late Longstreet development, at 1,653-57 feet cored a sand that had quite some gas in it and is shut down waiting for casing to make a test.

Caddo Completion

There was one completion in Caddo, but since it was not drilled as a com-

mercial well, if any, it doesn't show in the records. Nevertheless, it is mildly interesting as showing that there is still a little gas left in the Nacatoch in the one-time promising "Cross Lake Field" on the north edge of Shreveport. The well is Sam Hunter's No. 1 fee in Section 32-18-14, completed at around 900 feet, making between 200,000 and 300,000 feet of gas. It was satisfactory to Hunter since he drilled it as a source of fuel for his fishing and hunting camp and, small as it is, is interesting for those interests who are figuring on drilling a 5,000-acre block on the opposite (north) shore of the lake for hoped-for deep pay at around 5,000 to 6,000 feet.

Deep Test in Homer

Louisiana Oil Refining Corp. had bad luck with its deep test in Homer, No. 10 Langston, in the SW SW Section 19-21-7, junking the hole at 661 feet, but is down 150 feet on second hole and will set surface string during the next few days. Nichols and others' (Triangle-Ruston Drilling Co.) No. 1 McDermott, a promising wildcat of many vicissitudes in Section 28-18-6, Bienville Parish, was dry again at 3,160 feet and is waiting orders. Tests of the sand that made a show at 2,358 feet failed to repeat the show after the hole had been drilled to the present total depth, plugged back and casing cut. The job now is shut down for orders and probably will be written off as a dry hole. Olds & Smith bailed No. 1 Brice, SE SE Section 15-18-6, 2 miles north of the Triangle-Ruston test and supposed to be on the same (Gibsland) dome, and got nothing at 2,230 feet. T. G. Shaw is deepening No. 1 Wilkinson, Section 4-12-10, a semiwildcat half a mile east of Bull Bayou production in Red River Parish, since it wouldn't flow though it had 700 feet of oil in the hole from 2,838 feet. R. E. Tippett abandoned No. 1 Chatelaine, NE NE Section 34-1n-3e, Avoyelles Parish, a wildcat in the east central part of Louisiana. The Sligo district of Bossier Parish had a 5,000,000-foot gasser in Woodley Petroleum Co.'s No. 4 Harris in the SE NE Section 14-17-12, total depth 1,762 feet and 620 pounds rock. Magnolia Petroleum Co.'s completion of No. 3 Denman, NE NW Section 1-22-11, Webster Parish, as a pumper making 42 bbls. oil and 150 bbls. salt water from 2,741 feet, takes the Sarepta district off the list of active areas. But Gehrig Co.'s No. 1 Miller, NE SW Section 16-18-10, will keep Webster Parish on the list for a while yet. This well is scheduled as a deep test, 3,000 feet or so. Location is a mile or so north of Doyline, in the southern part of Webster, in an area which has been thoroughly gone over with geophysical instruments but rather neglected in the several years since two or three wildcats were drilled in the vicinity.

ARKANSAS

Marine Oil Co.'s No. 1-F Winn, Section 10-18-13, a Union County, Arkansas, wildcat in the Urbana district, is written off as a 100-bbl. pumper at 3,604 feet with 900 bbls. along with the 100 bbls. of oil. Excepting the deep gas in Johnson County it is by far the deepest producer in Arkansas; about 500 feet deeper than its predecessors in Urbana and 1,400 feet deeper than the Smackover second and third sand wells. H. L. Hunt got some heavy oil still deeper in a well he drilled several miles southeast about four years ago but the well was never a success commercially. Malloy & Co.'s No. 7 Burns in the NW NW, Section 31-17-15, El Dorado discovery pool area, pumped 15 bbls. initial from 2,213 feet.

Union County

Oil Fields Corp.'s No. 1 Simmons in the NW NW, Section 13-18-13, had salt water on drill stem test at 3,556-3,602 feet and is temporarily abandoned. J. E. Crosbie and associates, who started No. 1 G. L. Murphy, SW NW, Section 13-16-16, Union County, as a semiwildcat deep test just southwest of Smackover, have abandoned the idea of making it a producer from a supposed-to-be stray sand at 2,740 feet and are coring their way down. It pumped 100 bbls. fluid, half oil, from the old depth and probably will go to the originally scheduled 4,500 feet. Two other deep tests in Union are reported in the making. Messenger & Miller of El Dorado are reported assembling 5,000 acres centering around the common corner of Sections 15, 22 and 23-16-15 for a 5,000-foot hole and W. D. Wingfield already has 1,500 acres centering in Section 17-19-15 which he is interested in trying to get drilled for a deep test. The first of these two is north of El Dorado production and the second several miles south.

Arkansas-Louisiana Pipe Line Co. had a 3,000,000-foot gasser at around 2,900 feet in No. 1 Kelly, SW SW, Section 14-10-24, Clarksville gas district in Johnson County, but decided to pass it up and try for the larger, heavier gas lower down. Turner and others have reached the sand at 2,170-odd feet that made a show of oil in No. 1 Brown, SE SW, Section 23-15-18, a mile northwest of Mount Holly production in Ouachita County, and cemented 6⅝-inch at 2,164 feet for a test. Total depth is 2,178 feet with the bottom 14 feet in sand.

Late in the week a core from C. V. Lenz and others' No. 2 Johnson, SE NW, Section 24-15-26, Miller County, Arkansas, a north offset to the discovery well was brought to town. Black as tar and smelling strongly of oil, it was sent to laboratories for analysis. Total depth of the hole is supposed to be around 3,600 feet but since Lenz will not let it be known how deep he is or from where the core was taken there is not very much to be said. But it was a mighty good looking core. His No. 3 Johnson in Section 24-15-26 is drilling at around 2,800 feet, and it is reported he plans to go to 5,000 feet on either this or No. 2.

EAST TEXAS

Neither of the two East Texas wildcats that were reported last week as having shown for producers lived up to expectations. Knox and others' No. 1 Dunham, Charles Haley Survey of Panola County, was dry when bailed at 2,732 feet and is drilling below 2,760 feet. Ridgeway and others' No. 1 Parker, in the Jessie McKelvey Survey of Shelby County, never had any such show as reports reaching here indicated, and is shut down at 3,018 feet waiting orders. John Rogers' No. 1 Lanier, K. E. Wellhorn Survey of Cass County, is shut down for orders after a small show of oil and gas at 2,257 feet. Lee Timberlake and associates have derrick up for their second test just south of New Boston, county seat of Bowie County, the wildcat being No. 2 Tidwell in the NW cor. Tidwell tract of Joseph Eskell Survey. No. 1 Tidwell was a dry hole at 3,200 feet after a gas show at 2,661 feet, and a trace of oil at 2,585-2,680 feet. After the last test they shut down and were reported figuring on a series of core tests on their block of several thousand acres but apparently have decided to drill an offset for another test of the sands that yielded the shows in the first hole.

Daily Average Runs

Daily average runs from the several pools during the week were:

NORTH LOUISIANA	
Caddo, light	8,610
Caddo, heavy	2,785
Homer	3,360
Haynesville	5,225
DeSoto-Red River	2,805
Elm Grove	515
Bellevue	740
Cotton Valley	1,850
Urabia	5,300
Pleasant Hill	460
Sarepta-Carterville	2,265
Zwolle	9,400
Holly	910
Total North Louisiana	44,225
Last week	44,115
Increase	110

ARKANSAS	
El Dorado	3,920
Smackover, light	4,820
Smackover, heavy	35,720
Stephens	890
Nevada County	1,025
Lisbon	880
Champagnolle	3,450
Bradley	60
Mount Holly	70
Urbana	1,060
Total Arkansas	51,895
Last week	51,905
Decrease	10
Both states	96,120
Last week	96,020
Increase	100

MICHIGAN FIELDS

(Continued from Page 58)

lines. All available natural gas not now going into the lines and through the compressor station of the West Michigan Consumers Co. is being gathered up to offset the rapid decrease of production in the Dundee sands especially.

Mount Pleasant Field

The largest and most important new gasser in the Mount Pleasant area is Gibson, Johnson and Borden's No. 1 Scott, NW NW NE, Section 35-16n-4w, Vernon Township, Isabella County, which came in for 3,500,000 feet in the Marshall formation at 1,310 feet.

Two other gassers are located in Clare County, one in Grant and the other in Hatton Township. E. G. Palmer's No. 1 Citizens State Bank, SW SW SE, Section 31-18n-4w, Hatton Township, which was drilled with rotary tools, made about 500,000 feet of gas in the Marshall formation at 1,400-22 feet. McKay and Mercier's No. 4 McKay, SW NW, Section 6-17n-4w, Grant Township, made 1,000,000 feet in the Marshall pay sands struck at 1,427-37 feet.

The Ohio Producing & Refining Co.'s No. 2 Weidman, NE NE SW, Section 12-14n-3w, Chippewa Township, Isabella County, made about 25 bbls. initial in the Dundee. Limestone was topped at 3,516 feet and pay sands at 3,549 feet, total depth 3,580 feet.

Muskegon Field

The Muskegon Field completion was the Cimusk Oil Co.'s No. 2 Paulson-Barlow and others, SE NE, Section 8-10n-16w, Muskegon Township, Muskegon County, which made about 125,000 feet of gas in the upper Traverse at 1,625-40 feet.

A. S. Cochran's No. 2 Taggart, SE SE, Section 5-10n-16w, Muskegon Township, had an estimated flow of 200,000 feet of gas in the Monroe at 2,249 feet. It was drilled to a total depth of 2,280 feet and was to be shot.

The Republic Oil Co.'s No. 2 George S. Brand, SE SE, Section 11-10n-17w, Laketon Township, was not so successful in the Monroe, striking a show of less than 25,000 feet at 2,269 feet but no more up to 2,300 feet. It may be carried deeper.

The Muskegon Deep Well Syndicate's No. 5 Heinz struck a 30-foot streak of salt at 2,900 feet but went into what was believed to be Salina formation at 3,085 feet. Drillers were out of the pure salt at 3,302 feet and had penetrated about 25 feet of alternate limestone, shells and salt indicating the base of the Salina salt.

Topping the heavy layer of salt at 3,085 feet the well is more than 250 feet higher on structure than the Johnson Refining Co.'s No. 1 Kate Sovacool well drilled into the Niagara formation about a year ago in Section 2, Laketon Township, without success.

The Johnson-Sovacool well was about a quarter of a mile west of the limits of the proved Dundee Field in Laketon Township and is about 3 miles west of the present deep test. Salt was struck at 3,342 feet in this well and drillers passed out of the streak at 3,334 feet, having had 196 feet believed to have been in the Salina. The well was drilled to about 3,750 feet and had a slight show of gas at 3,724 feet which proved unsuccessful for commercial production. It was plugged and abandoned.

The new deep test is about half a mile west of the discovery well of the field and well up on structure which leads the operators to be very optimistic of success in view of striking the salt so much higher on structure.

One other well in the Muskegon Field is being drilled below the Dundee formation in search of gas, the Shoup Oil & Gas Co.'s No. 6 George H. Shoup, a former Dundee oil producer, NW NW, Section 8-10n-16w, Muskegon Township. It was drilling at about 2,150 feet on last reports and hoped to reach the Monroe within a week or less.

New Permits

Three permits for new wildcats include a test in Conway Township, Livingston County, near Howell and a newly determined "high" area, F. W. Kehlet and Fred W. Craft's No. 1 Killinger, NW NW NE, Section 15-4n-3e. The Johnson Oil Refining Co. took out a third structure test permit in Trowbridge Township, Allegany County, for No. 1 Forster, NW NE NW, Section 32-1n-15w. The third permit was Benedum-Trees Oil Co.'s No. 1 Brand, NW NW SE, Section 24-15n-7w, Sheridan Township, Mecosta County, in the middle of the State between the Muskegon and Mount Pleasant Fields.

KANSAS FIELDS

(Continued from Page 46)

NW cor. NE, Section 32-34-3, is spudding.

Douglas County

Steinbuchel and others' No. 1 Elder, SW cor. NE NW, Section 33-14-21, has been abandoned at 995 feet.

Ellsworth County

J. A. Aylward and others' No. 1 Stratman, SE cor. NW SE, Section 1-17-10w, is a rig on the ground.

Ellis County

Phillips Petroleum Co.'s No. 1 Herman, NE cor., Section 7-12-17w, has been completed for 125 bbls. in sand 3,719-25 feet. No. 1 Stasb, NE cor., Section 18-12-17w, is dry and abandoned at 3,919 feet. Davis and The Texas Company's No. 1 Perschenski, NW cor. NE SE, Section 1-13-16w, is a dry hole at 3,320 feet.

McPherson County

Shell Petroleum Corp. has the rig up for No. 1 Lewis, NW cor. SE, Section 30-19-1w. The Texas Company's No. 5 Munn, NE cor., Section 12-20-2w, has been completed for 2,600 bbls. in chat 2,921-67 feet.

Rice County

Phillips Petroleum Co.'s No. 2 Mezger, SE cor. SW NE, Section 21-20-10w, has been completed for 358 bbls. in silicious lime 3,329-38 feet.

Rooks County

Empire Oil & Refining Co. made location for No. 1 Holsman, NE cor. SW SE, Section 17-7-20w. Boyson and others' No. 1 Silvers, C NE, Section 21-8-19w, has been completed for 300 bbls. in sand 3,442-45 feet.

Rush County

Independent Oil & Gas Co. and Wentz' No. 1 Kerschner, C SE NE, Section 23-18-19w, has been abandoned at 3,885 feet.

Russell County

Keys Petroleum, Inc.'s No. 11 Mermas, NE cor. SW SW, Section 33-13-15w, has been completed for 131 bbls. in sand 3,072-80 feet. Empire Oil & Refining Co.'s No. 1 Dillner, NE cor., Section 35-13-15w, has been completed for 220 bbls. in sand 3,308-13 feet.

Sedgwick County

Derby Oil Co. is moving in tools for No. 3 Rimel, SW cor. NE NE, Section 30-27-2.

Stevens County

Trees Oil Co. made location for No. 1 Meyers, C SE, Section 27-34-39w. Western Production Co.'s No. 2 Ponder, C NW, Section 10-32-38w, has been completed for 7,143,000 feet of gas from sand 2,523-2,707 feet. No. 1 Webber, C NW, Section 13-32-38w, has been completed for 4,152,000 feet of gas in sand 2,584-2,745 feet. No. 1 Shaffer, C SW, Section 5-33-38w, made 4,553,000 feet of gas in sand 2,520-2,707 feet. Western Production Co.'s No. 2 E. B. Webber, C NE, Section 9-33-37w, has been completed for 5,857,000 feet of gas in sand 2,518-2,771 feet. No. 4 W. R. D. Fee, C NE, Section 6-33-36w, made 4,714,000 feet of gas in sand 2,583-2,794 feet.

Sumner County

Shell Petroleum Corp.'s No. 6 Rutter, SE cor. NW SW NE, Section 25-31-2, is dry and abandoned at 1,887 feet.

Woodson County

Empire Oil & Refining Co. and others staked location for No. 2 Berry, SW cor., Section 26-23-13.

Coffey County

The Prairie Oil & Gas Co.'s No. 1 Todd, NE cor. SW, Section 35-21-13, has been completed as a dry hole at 1,905 feet.

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Furnace and Gas Oils in Good Demand

Cold Weather in Chicago Territory Brings Orders for Burning Fuels. Gasoline Market Continues Quiet

By John B. Waldo

CHICAGO, Dec. 1.—The continued cold weather with prediction of more of the same kind to come is bringing in orders for fills from the consumers and giving the tank wagon distributor a very active business. This is being felt in the tank car market today, where there was a good demand for furnace oils of all kinds although the bulk of the orders called for gas oil. The gasoline market was quiet. Contract business is limited to the necessities of the jobber. Checks made by the larger refiners show that their contract customers are playing fair with them and giving them all of their business and that the fact that the jobber is not ordering the full amount due under his contract is due to the lack of consumption. The colder weather has not brought a material increase in the demand for the higher gravities.

The demand for kerosene was light but the distillate business is enabling refiners to get rid of a considerable part of their gasoline. An occasional complaint is received regarding the distillate being too good, that is, too high in gravity but it is believed that these complaints came from an attempt to substitute distillate for gas oil in a burner set to use the heavier oil. Prime white distillate was selling freely and readily at 3 cents with some refiners holding their special products at a higher price and selling at that price.

The zero gas oils were much wanted and the orders booked during the day will amount to a large total. Prices are very firmly held, the present demand cutting into stock or into contracts with refiners in this section. There was little activity in the heavy fuel oils but the zero oils are very strong both here and in the field. The general expression is that things will be better after the first of the year. Some refiners have made new prices on their lubricating oils, the new rates being decidedly lower. Pennsylvania bright stocks can be bought at 19 cents over a considerable period.

Demand Only Fair

With the jobbers more firmly set than ever not to buy a gallon that they do not actually have to have, the gasoline demand last week was only fair for the season being much more active earlier in the week than after the cold weather came along. Some of the tank car marketers who reported a good business on the days following Thanksgiving also stated that the business was all for furnace oil and that they were selling very little or no gasoline in the spot market. Contract orders were fairly large, being in many cases made up of shipping instructions either for the remainder of the November quota or for the December shipments.

There was little change in prices last week, but what changes there were, were downward. The most noticeable fact in the situation was the desire for business by refiners coupled with an evident disinclination to quote prices. In many cases the refiners called the trade seeking for gasoline orders, but if there were no orders they seemed unwilling to leave a quotation saying if the buyer found he needed gasoline to give them a ring, and they would make the price right. The fact that many refiners are and have been paying much less than the posted price for their crude, has something to do with the present market, some say that it has everything. There seemed to be an impression that the crude prices named by the Champlin Refining Co. were at or even below the market for this so-called "bootleg crude." As a matter of fact these Champlin prices are much higher than the price paid by refiners not alone in North Texas but in Oklahoma and Kansas for their crude. Below 50 cents a barrel is not an uncommon figure and some refiners have sought and gained large orders at low prices with the assistance of their producer who tells them to quote a price that will land the orders and that he, the producer, will make the price for the crude such that there will be a substantial profit for the refiner. This is hard competition for those refiners who are paying the posted price for their crude. Some refiners claim the reduction actually made in the price of crude to certain refiners amounts to enough to enable the refiner to operate and keep in the black on a 4-cent price for U. S. Motor gasoline. One well known refiner is today paying substantially less than 50 cents a barrel for good pipe line crude. Last summer a refiner stated he did not care where the price went for gasoline as he was running the producer's crude at the producer's expense and got his profit no matter how low the price.

There is considerable thought being given to the results from such a condition, and it is not impossible that the smaller refiner who is buying this free crude at perhaps one-half the price paid by the larger refiners who take their crude from the pipe line companies, is making what money is being made in the refining end of the industry. It is customary to state that the smaller refiners are losing money at the prices at which they are selling. There are some refiners who are today running to capacity or very nearly at capacity, who have made their success by closing down their plants whenever they cannot make money. Some of the export business has gone at very low prices. One order for export gasoline was placed at less than 4½ cents full export specifications and the refinery knows how to run this class of material and has had many such orders. The reduction in stocks of gasoline as estimated for last week, was rather a surprise and could only come from the reduction in runs with perhaps some help from export orders for the domestic consumption was low compared with last season. Jobbers report that they were doing a fair business up to the cold wave in this territory, but now they say there is little or even nothing doing.

Price Range

The price of U. S. Motor gasoline to the trade late last week was 4⅜ cents as an average price. There were sales made at 4½ cents and some few at 4¼ cents. Basing their ideas on the 4¼-cent quotation which may have been short selling, the trade here jumped at the conclusion that gasoline was being sold to marketers at 4 cents. Some purchases of material which was either distress gasoline or off-specification material may have been sold at 4 cents refinery but there was nothing to substantiate any such price for full U. S. Motory gasoline on a Group 3 basis. In the differential territory these prices were sometimes cut by some local refiner who was in position to make a low delivered price by reason of the freight differentials. The demand for the higher gravities was light. One refinery agent was selling the 400 endpoint at 4½ cents in competition with his own 437 endpoint material at the same price. Generally the market for 60-62 400 endpoint was held at 4⅝ cents to good buyers in the trade. There was very little demand for the higher gravities at any premium over the market for U. S. Motor as the buyers of premium material were all turning to Ethyl or some special make of antiknock gasoline. This material is steadily growing in demand and the cold weather is giving the sale another boost.

There has been no change in the condition at any of the sore points in the territory. At Detroit there was some little expectation of the removal from the contest for the championship as a giver away of gasoline, of the one who is generally stated to be the chief cause for the present predicament. The manager of this company retorts by naming a local refining organization as the one to start the trouble, and so it runs along with neither one willing to do what is necessary to make a stable market. In fact more seems to be required of the dealers in Detroit to secure a settlement than was asked of them when the trouble was newer than it is now. There are some who insist on the retirement of the distributor referred to from the gasoline business claiming that affairs will never be settled for good, so long as he remains where he can upset them.

Up in southern Minnesota the fight is still on and right now the major refiners are more upset than previously as the maker of the contracts with the wide margin and granting local protection is accused of violating the Code of Trade Practices by disturbing contracts and causing the makers to cancel contracts with six months to run. The refiners whose contracts have been so summarily cancelled state that they are determined not to accept cancellation on these contracts and the makers of the new contracts state they will not approve any contract which does violate the Code of Trade Practices. To this the refiner whose contracts have been least interfered with asks why they approach a customer whose stations are mute witnesses of the fact that the station owner is a distributor of their gasoline and other products. It is a bad mess and has resulted in much hard feeling and more is to follow for no refiner on earth can afford to make contracts giving local protection. Copies of the contracts are to be seen in this city and some of the correspondence is available.

Kerosene and Distillate

The refiner with a good distillate business is using the opportunity which his distillate orders give, to work off his kerosene. The distillate demand is maintaining the price of kerosene at 3 cents for a good distillate is selling at that price and it is hard to believe that kerosene would sell at less than distillate. The demand for kerosene is no better and no worse than it has been. There is the same uncertainty regarding orders and the same lack of need for the material. Prices are unchanged, there being too little demand for an advance, while the price of distillate, as stated, prevents kerosene from making a decline which it might do did not the distillate demand provide a way for the refiner to get rid of his surplus. Several if not all refiners are blending from 40 to 50 per cent kerosene with their distillate.

Furnace Oil Play

The zero weather gave the furnace oil demand its first large play. As is the usual condition, the first to feel the increased demand were the tank wagon distributors and they were kept going until late at night. The demand was largely for gas oil, the 28-30 fuel oil and distillates, although the demand for the latter did not begin to be as large as that for zero gas oil. The demand on the tank car distributors and the refiners followed and at the very close of last week, there was an active inquiry for all grades of furnace oil. Some orders which had been cancelled or held up during the warm weather of the first part of November were replaced. One feature of the demand reported by some of the largest tank car dealers, was that distributors who had refused to order the higher grades of oil early in the season saying the prices were too high for them to make any money at the local tank wagon rates, have begun to order the higher priced but better oil. They have found that the saving in the cost of the less expensive oil was more than lost through the trouble that it caused the dealer.

One thing the colder weather will do if nothing else and that is take out a lot of oil that has been held back by the warm weather. Distributors have found it impossible to move enough of their stocks to take in any more of oil ordered. Now with the large draft made on their storage by the cold spell even if it did not last, the dealer will fill his storage and be ready for the next cold spell. There is considerable talk of higher prices for zero oil and some sellers have decided to ask more for their better grades but the example is not being generally followed yet. It simply amounts to a spread of the brackets as some sellers are yet holding to the old price while others are asking an eighth of a cent more money. Much will depend on the character of the weather from now on and a continuance of cold weather would most certainly result in at least some advances. There is no thought of a run-away market but unless increased consumption brings out additional supplies of zero furnace oils, there will be a strong market unless the weather turns mild and remains so for several weeks.

Fuel Oils

There is no increase in the demand for heavy industrial fuels. The market is gradually assuming that state of mind which makes dealers consider a 20,000-gallon order as quite an order although in ordinary seasons they would not think anything of a sale of that quantity. In several industries the leaders are beginning to prepare for the coming spring season and this means that some fuel oil will be used. The demand, such as it is, is for the zero oils exclusively. A man must know his customer well to be able to ship him any ordinary cold test oils. The common premium being paid for zero oils over the ordinary refinery cold test is at present a little higher than it is some seasons, ranging as high as 10 to 15 cents a barrel, which shows the comparative scarcity of zero oils.

Lubs Slow

The business in lubricating oils is very slow right now. This is partly because of the extreme competition from certain refiners who have come on the market with new lines of lubricating oils or with a larger volume of the same oils which they have been furnishing previously. In either case the low prices are made to induce buyers to try their oils with the expectation that future business will be done on a better plane of prices. While the price of bright stocks has not been officially declined refiners, both eastern and western, are quoting prices lower than the published prices. A seller of western bright stocks remarked last week that he expected the prices for bright stocks would reach a low price which would be just one-half that quoted last season. Reminded that several prices were named for bright stocks last year, he said he expected to see quotations of 16 cents made for bright stocks in quantities, remarking he had encountered nearly that low a price during the week. This uncertainty regarding prices makes the seller hesitate to recommend that a good customer order at the present time for his 1931 needs and it makes the buyer reluctant to order more than for his immediate necessities. Other refinery stocks than brights are in the same predicament. The present demand for motor oils is

(Continued on Page 150)

Eastern Market Continues Unfavorable

Little Improvement Looked for Until After the Turn of the Year. Refinery Stocks Are Still Top Heavy

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Dec. 1.—Refined products markets in East Coast territory remain in easy position as the market goes into the closing month of the year, and little improvement is looked for until well after the turn of the year. While some companies will have fairly creditable showings for the full year, 1930 will go in the records of many of the oil companies as the "year of liquidation," and however optimistic some interests may appear in discussing the outlook for 1931, it is evident that the first quarter of the new year, in most divisions of the market, will witness a continuance of current unfavorable conditions.

Refiners' stocks of many products are still topheavy, and until this oversupply condition is adjusted, it is difficult to see how any real market stabilization can be attained. Leading factors recognize this condition and further cuts in refinery runs over the winter months appear inevitable, with determined efforts anticipated to get surplus holdings of various products down to the "working stock" level as early in 1931 as possible.

Weakness in crude oil markets has created a bearish sentiment among buyers of refined products.

Marketwise, there have been no changes of outstanding importance in eastern territory this week. Lub oils have softened a trifle, but with this exception, the previous week's quotations have carried over.

Refinery Gasoline

Demand has eased off somewhat during the week just ended, and the market is still in unsettled position. Leading refiners are holding the posted price at 7 cents per gallon for U. S. Motor in tank car lots, f.o.b. refinery, but sales are being made in the open market at 6¾ cents, and a few transactions at 6½ cents have been reported. On the other hand, gasolines which are in particular demand at this time of the year, such as some makes of California motor fuel, have commanded a premium over the posted price in a few instances.

Jobbers are not keeping their storage full, and this has made for an active spot market, with almost constant replacement buying. Jobbers in most instances are holding to the policy of keeping a few days' supply on hand with one or more cars rolling to afford necessary replacements. There is little disposition being shown by distributors to contract for gasoline, unless substantial inducements are offered, the general feeling appearing to be that it will be a buyers' market for some time to come and that spot market operations will prove most profitable in the long run.

There are numerous rumors circulating the market as to sales, or offerings, of gasolines from other refining areas at laid-down prices materially under the local market basis, but there appears little foundation in fact for most of these reports.

Tank Wagon Gasoline

Cold weather has further retarded consumption this week, and the market has shown some slackening in volume. There is still considerable competition for whatever gallonage is available, and price cutting continues the rule rather than the exception.

There have been no general changes in either tank wagon or service station prices in the territory during the week, but schedules are showing considerable irregularity, with changes being made to meet local competition wherever it develops.

Considerable interest was shown in marketing circles this week over the reindictment at Brockton, Mass., of most of the major companies marketing in Massachusetts, the indictments being based on the charge that these large markets, through price cutting, had engaged in a "conspiracy" to ruin the business of a local independent.

Kerosene

The posted price for 41-43 water white continues unchanged at 6½ cents per gallon in tank car lots at refineries, and, while this quotation is still being shaded, sellers in most instances appear unwilling to go under 6¼ cents. During the previous week, business had been reported at 6 cents. The firming up in the position of the tank car market is attributed to the substantial improvement in demand which has developed as a result of the cold wave which swept the East during the latter half of the week.

Tank wagon movement of kerosene also has picked up, marketers reporting a substantial improvement in gallonage. With the refinery market working into firmer ground, there is less heard regarding the likelihood of an early cut of 1 cent per gallon in tank wagon kerosene prices, although the market has not yet definitely firmed up to the point where the danger of such a cut is safely passed.

Furnace Oil

The market appears to have steadied somewhat following the recent flurry of price cutting, and with demand showing a sudden improvement, the market is in active position. Refiners are no longer disposed to accept low bids for prompt shipment oils, and it is believed that the distressed stocks which brought about a cut in the refinery basis early in November have now been rather thoroughly liquidated.

Marketers are quoting domestic heating oils in the local market at the following levels: 36-40 gravity, 8½ to 9 cents per gallon; 32-36 gravity, 6¾ to 7½ cents per gallon; 28-32 gravity, 6¾ to 7½ cents per gallon; 24-26 gravity, 5½ cents per gallon; 18-20 gravity, 5 cents per gallon; all delivered, tank wagon.

Furnace oil marketers are considerably interested in reports of the marked headway which automatic stokers, utilizing buckwheat coal, are said to be making in the domestic heating field. This, and the adoption of a special rate for gas heating in Greater New York, is expected to retard somewhat the development of additional consumption for furnace oils in this territory during the next several years.

Fuel Oil

Bunker fuel continues unchanged at $1.05 per barrel, in bulk, f.o.b. refinery terminals, and contract withdrawals by the marine trade are going through at that figure.

The market position is still rather easy, however, and increasing competition is reported in industrial bunker oil sales, with business being done at $1 per barrel and less. The Philadelphia area is still reported as the principal "weak spot" in the eastern fuel oil market, with bunker "C" reported available there at as low as 90 cents a barrel, refinery.

While 1930 has but a month to go yet, it is regarded here as possible that the bunker oil market may yet close the year at $1 a barrel or under.

Diesel Oil

Eastern refiners are still holding the market rather firmly, and the posted price of $2 per barrel, refinery, is the level at which practically all of current sales are being made.

Contracts for 1931 have been booked in substantial volume, on sliding scale basis, but it is expected that Atlantic Coast refiners will run into some rather stiff competition during the coming year, and a lower price basis is anticipated unless market conditions should show a sudden change for the better.

California and Gulf Coast Diesel oils can be laid down at New York at price levels substantially under the posted price of $2 a barrel, it is reported, but owing to the peculiar conditions surrounding the market for this fuel, independent operators are inclined to go rather slowly in bringing in this "outside" oil. Large Diesel oil consumers have rather definite ideas as to the attributes which the oil they use must possess, and are not inclined to shift from a burning oil which has given them entire satisfaction, merely for the sake of a slight price concession. Eastern refiners have been at considerable pains to co-operate with the large marine consumers of Diesel oil in turning out the type of oil which these operators have called for, and their thorough co-operation in this direction is expected to result in their holding existing contracts in the face of outside competition, although this competition, if it develops along serious lines, will doubtless force a downward price revision on the part of eastern refiners.

Gas Oil

Gas manufacturing companies are drawing stocks in substantial volume, and tank car movement at local refineries last week was exceptionally heavy.

The posted price for 28 plus recycled gas oil continues unchanged at 5¼ cents per gallon, in tank car lots at the refinery, but sales are being freely made down to 4¾ cents, and refiners are meeting this competition wherever necessary to hold the business.

Lower grades of gas oil are moving in good volume into consumption as furnace oil, and this demand is enabling refiners to cut substantially into surplus stocks of this low-grade oil.

Lubs

Cylinder oils have not yet shown any signs of pronounced recovery, and this week's market continues easy, with business along extremely limited lines. Bright stocks are quoted down 1 cent per gallon at 26 cents for the light and 24 cents per gallon for the dark. Other grades of cylinder oil are unchanged. While buyers' stocks of cylinder oil are reported to be extremely light, little buying is looked for during the balance of the year, blenders and compounders being disposed to keep their inventories as light as possible until the turn of the year. Export movement, however, continues fair, with the large integrated companies moving considerable oil to their foreign marketing associates.

Demand for red and pale oils has slackened this week, and marketers look for continued quiet over the balance of the year. Industrial consumers will take inventory at the close of the month, in most instances, and little real buying is looked for until around the middle of January. Prices remain unchanged.

Gulf Export Market

The only change in the Gulf price schedule this week is in 64-66 naphtha, which sold at 6½ cents during the period, one-eighth cent per gallon under previous quotations.

Several small cargoes, aggregating 8,000 tons of navy and 64-66, were sold at the Gulf during the week for spot shipment, but the prices at which the sales were made were not available, as the bulk of the gasoline went on a c.i.f. basis.

A cargo of 6,000 tons, made up of 5,000 tons of 64-66 and 1,000 tons of navy, was reported sold for January shipment to France at 6½ cents and 5½ cents per gallon, respectively. An inquiry from France was in the market for a cargo of 500 tons of prime white, 500 tons of water white, 1,500 tons of navy and 5,500 tons of 64-66, for first half January shipment, but up to the time of writing had not been closed.

There were no cargo transactions in kerosene reported in the Gulf market during the week, but several sales involving fairly large lots were reported at 4½ cents for prime white and 5½ cents for water white.

Paraffin Wax

Trading has been along restricted lines during the week, and prices show no revisions, although the general tone of the market continues in easy position.

Refinery stocks continue large, and selling pressure in some quarters of the market, in the face of current light domestic and export buying, is tending to hold prices at low levels.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended November 22 totaled 2,055,000 bbls., a daily average of 293,571 bbls., compared with 1,372,000 bbls., a daily average of 196,000 bbls. for the previous week, and a daily average of 247,107 bbls. for the four weeks ended November 22. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	232,000
Boston	107,000
New York	1,194,000
Philadelphia	275,000
Others	230,000
Total	2,038,000
Daily average	291,143
At Gulf Coast ports—	
Galveston district	17,000
Total	17,000
Daily average	2,428
At all United States ports—	
Total	2,055,000
Daily average	293,571
Daily average four weeks	247,107

Distribution of total imports is as follows:

Crude	1,197,000
Gasoline	274,000
Gas oil	66,000
Fuel oil	518,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended November 22 totaled 680,000 bbls., a daily average of 97,143 bbls., compared with 206,000 bbls., a daily average of 29,429 bbls. for the previous week and a daily average of 79,571 bbls. for the four weeks ended November 22. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	55,000
Boston	52,000
New York	332,000
Philadelphia	104,000
Others	137,000
Total	680,000
Daily average	97,143
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	680,000
Daily average	97,143
Daily average four weeks	79,571

Distribution of total California oil receipts is as follows:

Gasoline	472,000
Gas oil	156,000
Fuel oil	52,000

Shipments of California refined prod-

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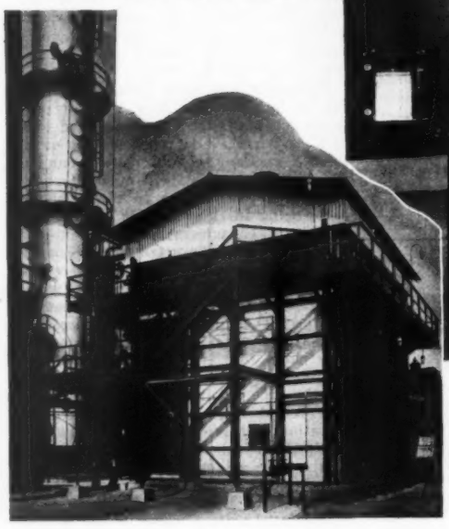
ECONOMY-- Through EFFICIENCY

October 23, 1930 THE OIL AND GAS JOURNAL

Right: Automatic Control Board for Winkler & Koch unit with three Brown tower controls, a liquid level control, a control for flow and a furnace control with safety feature.

Below: General view of Winkler & Koch unit.



Only One Man Per Shift Operates This Winkler and Koch Installation

The above illustrations show a Brown Instrument board for operating a Winkler and Koch unit.

This board carries three tower temperature controls, one liquid level control, one flow control and one furnace control—all Brown Automatics. The efficiency of these automatic controls is such that only one man per shift is needed in the control house.

The installation also includes a Brown Indicating Pyrometer with a 24-point switch, a Brown Instrument Board Clock, etc.

Let our engineers cope with your control problems, too. Write for information.

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EASTERN REPRESENTATIVE:
FRANK deGANAHL
Grand Central Terminal Bldg.
New York, N. Y.

Brown Automatic Controls

To Measure is to Economize

The WINKLER-KOCH ENGINEERING CO.

Consulting and Construction Engineers
WICHITA, KANSAS

Manufacture of Natural Gasoline

SEVEN PLANTS NOW IN KETTLEMAN HILLS AREA

LOS ANGELES, Calif., Dec. 1.—With its third casinghead gasoline plant three-quarters completed, the Standard Oil Co. of California is expected to be amply prepared to care for the anticipated flow of gas from its No. 65, a direct offset to the Superior Oil Co.'s No. 1 Huffman on Section 29-21-17, on the north dome of the Kettleman Hills oil field.

The company has two other plants handling its production from wells that offset the Milham Exploration Co.'s No. 1 Elliott discovery well. Western States, The Texas Company, Superior and Petroleum Securities each have casinghead gasoline plants handling their gas at Kettleman Hills, and with Standard's new plant there will be seven installations on the north dome.

The fact that Shell, Richfield, North American, Union and several smaller operators will probably complete wells at Kettleman Hills within the next year promises the construction of other absorption plants to handle wet gas. Union is drilling No. 1 Amerada on Section 29 as an offset to Superior's producer, while Shell, Richfield and North American are located on Section 36-21-17.

COMPLETE NEW PLANT IN BELRIDGE, CALIF. POOL

The new natural gasoline plant of the Belridge Oil Co. located in the Belridge Pool of California will be completed this week and placed in operation. The plant will take the gas from the No. 15 well of the Belridge company and will have a capacity of 50,000 gallons daily. This well was recently completed with a large crude oil and gas flow. Additional wells are now drilling in that section and it is expected that more natural gasoline plant capacity will be needed.

Operating conditions for the natural gasoline plant are similar to those found in the Kettleman Hills area. The plant will be operated with a well pressure of 450 pounds. The gas has a gasoline content of approximately 1 gallon per 1,000 cubic feet. The plant was built by the J. A. Campbell Co. of Long Beach, Calif.

MOVE CARBON BLACK PLANT

CASPER, Wyo., Dec. 2.—P. B. Dykeman of Riverton, Wyo., president of Standard Carbon Co. and Security Oil & Gas Co., stated last week that his company was preparing to start operation at the carbon black plant which was purchased in Cowley and moved to its new location. The carbon company has one well completed in Buffalo anticline, on NW Section 17-27-95, southern Fremont County, which has an aggregate production of 4,000,000 cubic feet of gas from three sands. Total depth of the well is now 1,560 feet.

PLANT UNDER FULL OPERATION

With the known reserves of gas existing in the Van Zandt Field of Texas the development of the field is holding an interest along with that in the Kettleman Hills Field of California and the Oklahoma City Field. The slow rate at which production is permitted in each of these has naturally held the natural gasoline production to a correspondingly low figure. The Pure Oil Co., the principal factor in the Van Zandt area, now has its new gasoline plant under full operation and is producing about 23,000 gallons daily. Present equipment consists of fourteen 200-horsepower gas engine driven compressors, two 190-horsepower direct connected gas engine driven electric generators and two 100-H.P. boilers.

STANDARDIZED CASINGHEAD GAS CONTRACT READY FOR GENERAL USE

Within the next week a standard form of casinghead gas contract will be made available by the Natural Gasoline Association of America. Many companies have already adopted this contract in its entirety and have been using it for several months. As a result of the adoption of this contract by the association it is believed that it will ultimately be used by all buyers and sellers of casinghead gas in the Mid-Continent at least. Every phase of the details of buying and selling casinghead gas has been considered and the contract meets the approval of the state regulatory commissions in the states of Oklahoma, Kansas, Texas, New Mexico and Arkansas. It is probable the contract meets the requirements of other states also.

A suffix has also been prepared which will permit the contract to be used in those cases where gas is produced on public land reservations, and with the suffix the contract is acceptable to the federal department of the interior.

In developing the standard form, the contracts of the various companies were taken as a basis and such changes and additions were made as agreed upon by a committee under the direction of the gas contracts committee.

The printed contracts will be made available in complete form including the plotted curves showing the gasoline content of the gas, etc., at the Olds Press in Tulsa. The terms of the contract are included below:

CASINGHEAD GAS CONTRACT

THIS AGREEMENT, Made and entered WHEREAS, Seller is operating the above into this.....day of....., 19.. by and between .. .., hereinafter referred to as the "Seller," and..... ..... hereinafter referred to as the "Buyer."

WITNESSETH: WHEREAS, Seller owns and holds a certain valid and subsisting oil and gas mining lease covering the following described lands situate and being within the County of..... ....., State of....., to-wit:

and,

described properties and certain wells on said lands are productive, or may be productive, in addition to oil, of what is termed casinghead gas, (it being understood that the term "casinghead gas" means the gas issuing from oil wells whether produced from the same sand or strata from which the oil is produced or by the induction of gas with compressors or other means for flowing the oil), and the Seller desires to sell the casinghead gas which may hereafter be produced from oil wells located on said premises; and,

WHEREAS, Buyer contemplates the construction of, or has in operation, a gasoline plant in the vicinity of said property and desires to buy said casinghead gas;

NOW, THEREFORE, in consideration of the sum of One ((1.00) Dollar paid by the Buyer to the Seller, receipt of which is hereby acknowledged, and other payments and covenants hereinafter specified, the Seller hereby grants, bargains, sells and agrees to deliver to the Buyer and the Buyer agrees to purchase and take from the Seller, subject to the stipulations and conditions hereinafter specified, all the casinghead gas now or hereafter produced from the wells on the lands hereinabove described.

1. PURPOSE—The gas hereby sold is conveyed to the Buyer for the purpose of manufacturing therefrom gasoline or such other product or products as may be manufactured at Buyer's plant.

2. DELIVERY PLACE—The delivery of the casinghead gas shall be made at vapor-tight flow tanks and/or gas traps furnished by Seller and/or at the casingheads of the wells. Buyer may, with Seller's consent, install equipment acceptable to Seller on Seller's storage tanks for the purpose of saving and utilizing vapors therefrom, which vapors for the purpose of this contract shall be considered casinghead gas.

3. DELIVERY DATE—The delivery and reception of said gas shall begin on or before ..... 19...., and failure to accept and/or agree to pay for said gas by said date shall give the Seller the right to cancel this contract any time thereafter before actual utilization begins by serving ten (10) days' written notice on Buyer.

4. LEAN AND FLUSH GAS—The Buyer agrees to take all the gas testing more than .....gallons of gasoline per thousand cubic feet of gas; provided, that during flush casinghead gas production from the property covered hereby the Buyer shall only be obligated to take ratably as to quantity with all other flush production connected to its plant. Seller shall have the right to dispose of any gas not taken or paid for by the Buyer; provided that Buyer shall have the right to take any or all of such gas at any time thereafter conditioned upon Buyer giving Seller at least ..... days' notice of it's election to so do.

5. RESIDUE GAS—The Buyer shall return to the nearest boundary line of the Seller's lease, above described, sufficient residue gas for the development and operation of said lease, the amount of such gas not to exceed that remaining from the quantity of casinghead gas delivered to the Buyer from said lease after the extraction of gasoline therefrom, less the proportionate part of said residue gas necessary for gasoline plant operation both determined by the residue gas curve attached hereto; provided that, in the event residue gas to be returned hereunder by the Buyer shall be insufficient in quantity for the purpose of developing and operating said lease, the Seller hereby reserves the right to use casinghead gas from its lease sufficient in quantity to make up the deficiency. Utilization of said residue gas so returned by the Buyer shall be at the Seller's risk. In the event Seller accepts and uses dry gas, furnished by Buyer, in excess of the amount of residue gas to which Seller is entitled, Seller shall pay Buyer for such dry gas at delivered cost to Buyer.

It is agreed and understood by and between the parties hereto, that if and when the residue gas remaining after the extraction of gasoline from such casinghead gas shall be more than sufficient for the needs of Buyer in the operation of said gasoline plant and more than sufficient for the needs and requirements of Seller for the development and operating purposes upon the premises from which the said casinghead gas is produced, then, and in that event, the Buyer shall have the right to sell any or all surplus residue gas so remaining; provided that in the event of sale by the Buyer of any or all of such residue gas, Buyer shall pay to the Seller herein fifty per cent of the net proceeds received from the sale of such gas, such payments to be made at the same time as other payments hereunder. Net proceeds as herein used is defined as the gross proceeds less any cost of boosting and/or transportation necessary to market such gas. It is further agreed and understood that as a basis of settlement hereunder for the sale of residue gas, it shall be determined how much residue gas the Seller was entitled to have returned and the volume that actually was returned during the month for which settlement is to be made, and the difference shall be regarded as the volume of surplus residue gas available for sale from the casinghead gas delivered hereunder. The volume of surplus residue gas sold from the casinghead gas delivered hereunder shall be determined by the proportion which the volume of surplus residue gas available for sale from said delivery bears to the total volume of surplus residue gas available for sale from all casinghead gas delivered to said plant.

6. DILUTED GAS—The Seller hereby specifically reserves the right to introduce air, gas, or any other extraneous substance into the well or wells covered hereby or into the sand or sands from which said well or wells are producing when in the exclusive judgment of the Seller the introduction of such substances is desirable in the operation of such well or wells for the production of oil even though such well or wells may be entirely destroyed as a producer or producers of casinghead gas; provided that, should the Seller's operations under this paragraph create a condition which in the exclusive judgment of the Buyer makes the taking and utilization of casinghead gas therefrom unprofitable to

(Continued on Page 150)

FURTHER INCREASE CALIFORNIA NATURAL GASOLINE PRODUCTION

One hundred thirty-seven natural gasoline plants with a daily indicated capacity of 2,840,100,000 cubic feet, report a recovery of 67,143,098 gallons of natural gasoline from 47,319,018,000 cubic feet of gas treated in October. This is an increase of 548 bbls. in daily average production, according to the Bureau of Mines.

Utilization of natural gasoline amounted to 1,877,724 bbls., an increase over September of 266,881 bbls. Daily average utilization of 60,572 bbls. was 9,003 bbls. more than daily average production of 51,569 bbls.

Stocks of natural gasoline at the end of October amounted to 1,441,497 bbls., of which 34,528 bbls. were reported by natural gasoline plant operators and 1,406,969 bbls. by refinery operators. This is a decrease of 279,079 bbls. under September stocks. This stock figure of 1,441,497 bbls. is approximately 24 days' supply at the current rate of consumption.

CALIFORNIA NATURAL GASOLINE PRODUCTION, DISTRIBUTION AND STOCKS, OCTOBER, 1930

Production by Fields

	Gas treated (1,000 cu.ft.)	Natural gasoline produced (gals.)
Fullerton and Whittier	566,733	1,186,396
Midway	2,489,772	3,946,241
Huntington Beach	882,651	2,515,502
Long Beach	7,445,194	14,797,757
Richfield	647,949	884,705
Santa Fe Springs	10,431,285	15,848,421
Seal Beach	1,144,555	1,786,504
Ventura Avenue	4,963,198	5,042,675
All other fields	18,747,681	21,134,897
Total	47,319,018	67,143,098

Production by Methods

Type of plant—	Gas treated (1,000 cu.ft.)	Natural gasoline produced (gals.)	Gasoline recovery per 1,000 cu. ft. gas treated
Oil absorption	38,740,314	55,081,936	1.422
Compressor	222,002	256,786	1.157
Combination comp. and oil absorption	8,356,702	11,804,376	1.413
Total	47,319,018	67,143,098	1.419

Finished gasoline produced at plants, 24,306 bbls.

Distribution

		Barrels
Stocks first of month	.....	1,720,576
Produced during month	.....	1,598,645
Quantity mixed with crude or unfinished oils	77,823	
Used in blending at refineries	1,711,927	
Stocks end of month	1,441,497	
Balance*	87,974	
Total	3,319,221	3,319,221

*Includes evaporation losses, purchases by jobbers for blending, etc.

Stocks

	Gallons	Barrels
Natural gasoline held by natural gasoline plant operators	1,450,172	34,528
Natural gasoline held by refineries	59,092,698	1,406,969
Total	60,542,870	1,441,497

Brief Items for Petroleum Refiners

BUILD UNIQUE REFINERY AT SMACKOVER, ARKANSAS

EL DORADO, Ark., Nov. 28.—A new refinery is to be built near Smackover by Sylvester Dayson and associates.

Mr. Dayson resigned his position as vice president of the Lion Oil Refining Co., October 24, to take effect December 1.

The new refinery will be located between Kenova and Smackover adjacent to the Missouri Pacific tracks and will be equipped for the manufacture of specialties including asphalt, Diesel oil and lubricating oils, as well as gasoline, kerosene, etc.

Erection of the plant, which will have 300 bbls. capacity per day, is to be started December 15, and is expected to be ready for operation about March 1. Only 10 to 12 men will be employed by the refinery.

The company will be known as the Dayson Petroleum Co., Inc., and will have capital stock of $100,000. It will be incorporated under the laws of Delaware. Home offices of the company will be maintained in the Exchange Building in El Dorado. Mr. Dayson stated that a meeting of the stockholders will be held in the next few days and directors and officers elected. It is understood that Mr. Dayson will be president of the company.

Associated with him in the new project are two financial institutions of Chicago and New York whose names are not announced.

Several local men also are interested in the concern, one of whom is George W. James. E. C. Winters of Kansas City, former president of the Lion Oil Co., is interested in the new company.

McCOLL-FRONTENAC PROJECT

CHATHAM, Ontario, Nov. 29.—In connection with current reports that the McColl-Frontenac Oil Co. is contemplating an extension of its refining system in the Canadian West, the following statement has been given out by the executive offices at Montreal:

"While it is true that we have under consideration the possibility of erecting a refinery in western Canada to take care of our increased sales in that territory, our directors have not as yet reached a definite decision as to when we will go ahead with this project. Frankly, it is altogether likely that a decision will not be arrived at by our board for at least another 12 months. However, as conditions are changing very rapidly in the petroleum industry, it may yet be decided that it is economically possible to establish a refinery before that date."

R. W. WALSH MADE DIRECTOR

Ralph W. Walsh has been elected a director and vice president in charge of sales for the Richfield Oil Co. He gained rapid recognition as sales manager of the company's New York division through his success in building up a large outlet for the company's products in the eastern states. His election was also a result of the company wishing to choose a man who could effect certain economies in the operation of the various units, including crude purchases as well as sales.

MORELAND JOINS VACUUM

CLEVELAND, Ohio, Dec. 1.—The Moreland Oil Co. of Adrian and the Vacuum Oil Co. have formed a business alliance under which the Adrian company will retain its identity but will have an opportunity for immediate expansion. The Moreland Oil Co. now operates about 200 filling stations in southern Michigan and northern Indiana.

GASOLINE CONSUMPTION SHOWS SMALL INCREASE

Gasoline consumption in 47 states for the month of September, 1930, as indicated by reports made by wholesalers and dealers in the various states, under provisions of the gasoline tax laws or gasoline inspection laws, totaled 1,256,025,000 gallons, compared with 1,193,858,000 gallons in September, 1929, an increase of 62,167,000 gallons, or 5.2 per cent, according to the American Petroleum Institute. Daily average consumption for September, 1930, was 41,868,000 gallons, compared with a daily average of 43,345,000 gallons in August, 1930, a decrease in daily average during September of 3.4 per cent.

Gasoline consumption in 45 states for the nine months ending with September, 1930 (Illinois and New York not being included for the reason that comparative figures for the year 1929 are not available), amounted to 8,337,186,000 gallons, compared with 7,814,787,000 gal-

(Continued on Page 152)

CHICAGO POST OFFICE OPENS GASOLINE BIDS

CHICAGO, Nov. 29.—The Chicago Post Office, motor vehicle department, received and opened bids today for supplying the department with approximately 300,000 gallons of gasoline during the first three months of 1931. The bids were submitted in the customary forms, one employing tank car delivery to the seller's storage where the gasoline will be delivered to the post office truck for transport to the post office garage, the other form for tank wagon deliveries. For some years the bids accepted have been the ones in tank car deliveries which receive the land grant freight rate allowed to the United States Government. The bidders in the tank car class were: The Deep Rock Oil Corp., which bid a flat rate of 5 cents a gallon or one-eighth cent below the average tank car market with a maximum of 5¼ cents. The Jewett & Sowers Oil Co. bid the average of the tank car market with a maximum of .0523 cents a gallon. The Seneca

(Continued on Page 152)

ATLANTIC REFINING CO. DEVELOPS SOUND RECORDER

By applying the principles of radio reception, the Atlantic Refining Co. has developed a sensitive instrument with which the intensity of knocking of a gasoline is indicated on a scale with an accuracy far beyond that of the human ear. Its practical application is readily apparent. A similar device was shown before the refining division during the recent meeting of the American Petroleum Institute in Chicago and the "Acoustimeter" promises to become an essential part of the standard antiknock testing machine.

In briefly explaining the new development, Dr. T. G. Delbridge, research director of the company pointed to the conventional "mike" with which the sound of the motor is picked up. Normal engine noises are filtered out, allowing the knocking sounds to pass through. These sounds have a frequency approximating 3,000 vibrations per second and their intensity is then amplified and for convenience in evaluating are transposed onto a meter scale.

The apparatus has been placed in routine use at the company's laboratories in their Philadelphia refinery as part of the procedure for controlling the antiknock rating of the motor fuels produced by the company and for comparative testing.

R. W. McDOWELL REVIEWS EUROPEAN OIL MARKETS

Robert W. McDowell, vice president and director of Mid-Continent Petroleum Corp., who with Jacob France, president, spent six weeks in England and France, has returned to Tulsa, enthusiastic at the prospects of a continuation of the profitable and pleasant relationships between consumers of petroleum products in those lands with refiners and producers in this country.

"Our visit to England and France," said Mr. McDowell, "was to see for ourselves just how the products of Mid-Continent refineries were received and used, and to ascertain how we might better serve the consumers of continental Europe. We had a most pleasant stay in both lands, and expected to visit Spain. Portugal, Holland, Germany and two or three other countries, but our customers from those lands heard of our coming and came to see us at Paris. Paris is truly the Mecca of the European."

He was impressed with the way that the English are adopting the superstation type of filling station. The laws prevent the establishment of filling stations in the crowded towns and cities, but they spring up at strategical points on the highways, 3 to 10 miles from the congested centers. Some of the stations, he said, would do credit to outstanding superstations found in the United States. In the crowded centers the motorist usually finds his supplies of petrol and oils in garages. Many of these garages have four to six-story buildings and have natural runways, or elevators for the cars. Parking space, he said, is as scarce as in Tulsa.

A different condition prevails in Paris, he said, and he did not see many filling stations but innumerable garages handling oil. In both cities, he found as intense traffic congestion.

Some other observations noted by Mr. McDowell are included in his statement:

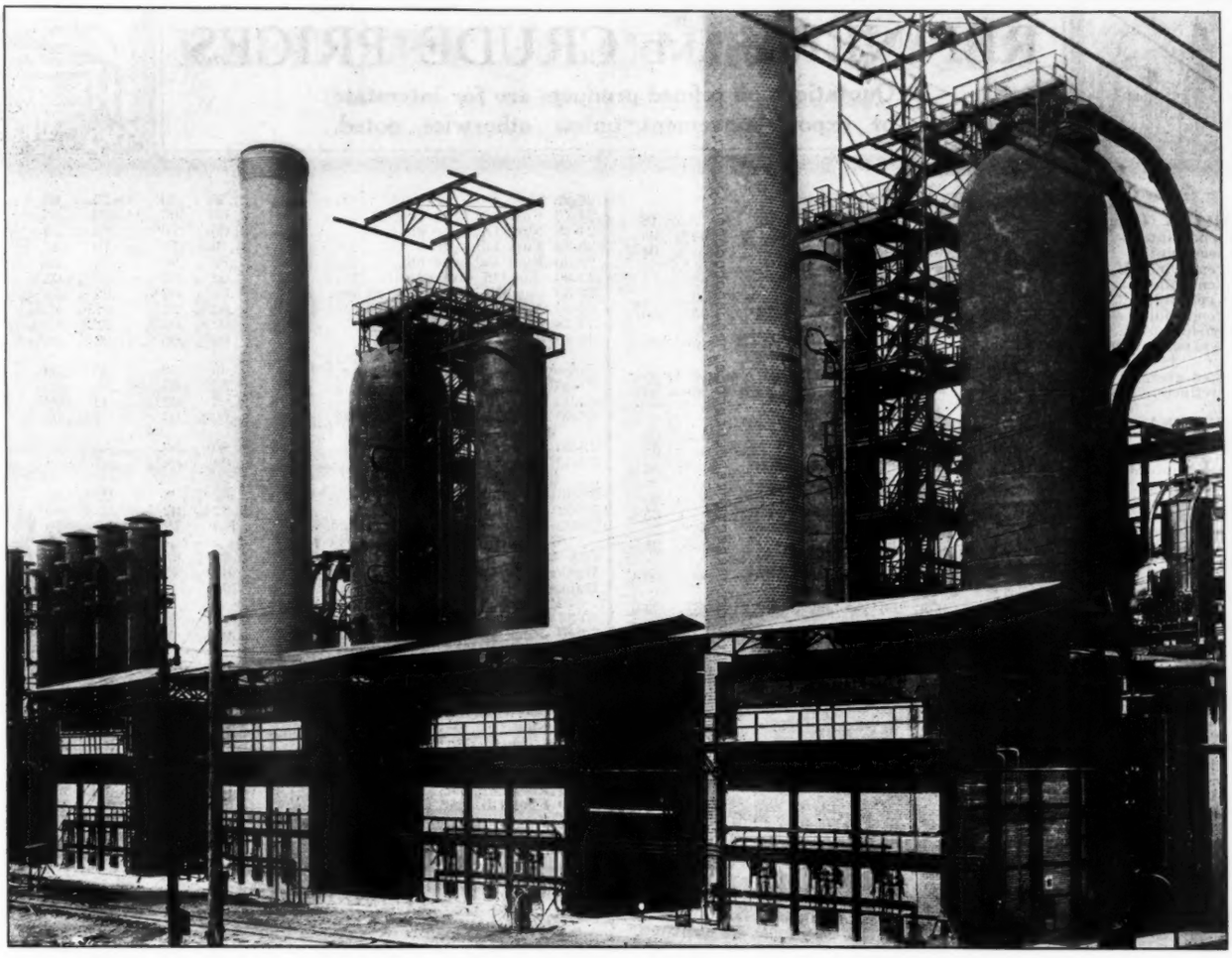
"The importers of gasoline in England are surprised at the tendency of American refiners to cut prices. Cutting prices does not influence more buying, but rather it has a tendency to stop. It is indefensible for refiners to continue to refine high grade crude, and then undersell their neighbor, just to keep their plants busy. Better close down than to keep running at a loss.

"The impression exists in England that a great oil war is on, or soon will be. The Shell is strongest there, but the Standard is constantly invading its territory. Other American oil firms are steadily gaining a foothold. One notes Sinclair, Vacuum, Cities Service, Socony and other American products advertised in competition with Shell and other English refined oils.

"The saturation point is far away in the matter of automobile building and sales in Europe, but the American tariff will stop the movement of United States built cars abroad. Ford has several plants building abroad and his agents report a growing demand. The Austin car and others are very popular abroad."

TWO STATES INCREASE TAX

On November 27 Louisiana increased the gasoline tax 1 cent to 5 cents and on December 1, New Jersey increased its tax 1 cent to 3 cents. The increase was the result of the issuance of bonds for the improvement of roads within the respective states. Louisiana recently approved a $100,000,000 road improvement program which provided for retirement of these bonds through the increase in the gasoline tax, which became automatically effective with the approval of the bonds. In addition to the 5-cent state tax many of the Louisiana cities and parishes collect 1 cent or more per gallon, bringing the total tax to 6 cents.



28,000 Barrels of Crude per Day

Eight products to exacting specifications are recovered from each of the two Foster Wheeler distilling units illustrated. The lighter fractions recovered from the atmospheric stage include gasoline, naphtha, kerosene and light gas oil. The products recovered from the vacuum stage include heavy gas oil, pressable wax distillate, overhead cylinder stock and flux bottoms.

The installation of these two Foster Wheeler distilling units, in the limited available space of 220 ft. x 144 ft. presented a unique problem from the standpoint of design.

FOSTER WHEELER CORPORATION
165 Broadway, New York, N. Y.
Branches in Principal Oil Centers

Foreign Associates: Foster Wheeler Limited, London, England.
Foster Wheeler Limited, Toronto-Montreal, Canada.
Societe Anonyme Foster Wheeler, Paris, France.

FOSTER WHEELER

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Dec. 2		Nov. 25		Nov. 18	
50-52 450 endpoint	.04¼	.04½	.04½	.04¾	.04¾	.05
56-58 450 endpoint	.04¼	.04½	.04½		.04¾	.04¾
*58-60 437 endpoint (U. S. Motor)	.0498		.0513		.0515	
*60-62 437 endpoint	†.04¾	.05¼	†.04¾	.05¼	†.05¼	
*60-62 400 endpoint	†.05¼	.05½	.055		.0525	
*64-66 375 endpoint	.065		†.05¼	.05¾	†.05½	.06
68-70 360 endpoint	.05½	.05¾	.05¾		.05¾	
64-66 437 endpoint (blend)	.04¾	.05¼	.04¾	.05¼	.40¾	.05¼

*Weighted average prices December 1, November 24 and 17 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

NORTH TEXAS—						
50-52 450 endpoint	.04¼	.04½	.04½		.04¾	.05
58-60 450 endpoint	.04⅝	.04½	.04¼	.04¾	.04¾	.05
58-60 437 endpoint (U. S. Motor)	.04¼	.04½	.04½	.04¾	.04¾	.05¼
60-62 400 endpoint	.04⅜	.04¾	.04¾	.05	.05¼	
64-66 390 endpoint	.04¾	.05	.04⅞	.05	.05¼	.05½
64-66 375 endpoint	.05⅛	.05½	.05¼	.05½	.05½	.05¾
68-70 360 endpoint	.06		.06		.06	
64-66 437 endpoint (blend)	.04½	.04¾	.04¾		.04¾	.05¼
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.05¾	.06¼	.06¼	.06½	.06¼	.06½
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.05¾	.06¼	.06¼	.06½	.06¼	.06½
PENNSYLVANIA—						
52-54 Naphtha	.06½		.06¾		.06¾	
54-56 Naphtha	.06½		.06¾		.06¾	
58-60 Gasoline	.06½		.06¾		.06¾	
60 Gasoline	.06¾		.06¾	.07	.06¾	.07
62 Gasoline	.07		.07		.07	
64 Gasoline	.07¼		.07½		.07½	
68-70 350 endpoint gasoline	.08	.08½	.08½		.08½	
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.07½	.11	.08	.11	.08	.11
†58-62 400 endpoint domestic gasoline	.09	.11	.09½	.11½	.09½	.11½
*CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint ((Naphtha)	.04½	.04¾	.04½	.04¾	.04½	.04¾
56-58 450 endpoint	.04⅝	.04⅝	.04½	.04¾	.04½	.04¾
58-60 437 endpoint (U. S. Motor)	.04⅜	.04⅜	.04½	.05	.04½	.05
60-62 400 endpoint	.04⅝	.05	.04¾	.05¼	.04¾	.05½
64-66 375 endpoint	.05½	.06	.05¼	.05¾	.05¼	.05¾
64-66 437 endpoint (blend)	.04½	.05	.04⅝	.05	.04⅝	.05
68-70 360 endpoint	.06	.06¼	.06	.06¼	.06	.06¼
GULF COAST (Export)—						
58-60 U. S. Motor	.05½	.05¾	.05½	.06	.05¾	.06¼
60-62 400 endpoint	.06	.06½	.06	.06¾	.06¼	.07
61-63 390 endpoint	.06¼	.06¾	.06¼	.07	.06½	.07¼
64-66 375 endpoint	.06½	.06¾	.06⅝	.06¾	.06¾	.07⅜

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Dec. 2		Nov. 25		Nov. 18	
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼	.04½	.04⅝	.04¾	.04⅝	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.04⅜	.04½	.04½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.03¾	.04	.04		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.03¾		.04		.04⅜	.04½
Grade C, 80-92, 375 e.p., rec. 78%	.03¾		.04		.04⅜	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼	.04½	.04⅝		.04⅝	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.04½		.04½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.03¾	.04	.04		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.03¾		.04		.04¾	
Grade C, 80-92, 375 e.p., rec. 78%	.03¾		.04		.04⅜	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04½		.04⅜		.04¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.04⅛		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04		.04		.04½	
CALIFORNIA—						
75-78 375-390 endpoint	.06¼	.07¼	.06¾	.07¾	.07	.08
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼		.04⅝	.04¾	.04⅝	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.04⅜		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.03¾		.04		.04⅝	

BURNING OIL

OKLAHOMA (Group 3)—	Dec. 2		Nov. 25		Nov. 18	
41-43 water white kerosene	.03⅛	.03¾	.03⅛	.03¾	.03⅛	.03¾
42-44 water white kerosene	.03¼	.03¾	.03⅛	.03¾	.03⅜	.03¾
NORTH TEXAS—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
40-41 water white kerosene	.02⅞	.03	.02⅞	.03	.02⅞	.03
*NORTH LOUISIANA—						
41-43 water white kerosene	.04¼	.04⅜	.04¼	.04⅜	.04¼	
*ARKANSAS—						
41-43 water white kerosene	.04¼		.04¼		.04¼	
PENNSYLVANIA—						
43 Kerosene prime white	.04⅞		.04⅞		.04¾	
45 Kerosene water white	.05	.05¼	.05	.05¼	.04⅞	.05⅛
46 Kerosene water white	.05¼	.05½	.05¼	.05½	.05¼	.05½
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.06	.05	.06	.05	.06
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
42-44 water white kerosene	.03¼	.03½	.03¼	.03½	.03¾	.03½
GULF COAST (Export)—						
41-43 prime white	.04½	.04¾	.04½	.04¾	.04½	.04¾
41-43 water white	.05½	.05¾	.05½	.05¾	.05½	.05¾

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Dec. 2		Nov. 25		Nov. 18	
Below 18 gravity Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
18-22 Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
20-22 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
22-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
26-30 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
28-30 Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.90
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color, high cold test)	.02¼	.02½	.02¼	.02½	.02¼	.02½
32-36 Gas Oil (straw color, low cold test)	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
38-40 Straw Distillate	.02¾	.03¼	.02¾	.03¼	.02¾	.03¼
NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
24-26 Fuel Oil, per bbl.	.55	.65	.55	.65	.55	.65
32-36 Gas Oil (industrial)	.02	.02¼	.02	.02¼	.02	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
30-32 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
*ARKANSAS—						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
16-22 Refinery Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.03½	.03¾	.03¾		.03¾	
Bunker C Fuel (cargo lots), per bbl.	.67½	.75	.65	.67½	.65	.67½
Bunker C Fuel (small lots)	.90		.90		.90	
PENNSYLVANIA—						
30-34 Fuel Oil	.03½		.03½		.03¾	
36-40 Fuel Oil	.03½		.03½		.03¾	
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.95	.60	.95	.60	.95
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.85	.55	.85	.55	.85
15-19 Fuel Oil, f.o.b. tank cars	.35	.85	.40	.85	.45	.85
27 plus Diesel, per bbl.	.85	1.05	.85	1.05	.85	1.05
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.60	.65	.57½	.62½	.57½	.65
22-26 Fuel Oil, per bbl.	.65	.70	.62½	.70	.62½	.67½
28-30 Fuel Oil, per bbl. (zero)	.90	.95	.90	.95	.90	.95
32-36 Gas Oil (zero)	.02¼	.02⅜	.02¼	.03⅜	.02½	.02⅞
32-36 Gas Oil (industrial)	.02⅝	.02⅞	.02½	.02⅞	.02¼	.02⅝
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Dec. 2		Nov. 25		Nov. 18	
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.09		.09		.09	
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 3 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600, steam refined, light green	.07	.08	.07	.08	.07	.08
600, steam refined, dark green	.04½	.05½	.04½	.05½	.04½	.05½
190-200 vis., D color, Bright Stocks	.25		.25		.25	
150-160 vis., D color, Bright Stocks 0-10 C.T.	.19	.20	.20	.21	.20	.21
150-160 vis., D color, Bright Stocks 10-25 C.T.	.18	.19	.19	.20	.19	.20
150-160 vis., D color, Bright Stocks 25-40 C.T.	.17½	.18½	.18½	.19½	.18½	.19½
150-160 vis., E color, Bright Stocks	.17	.18	.18	.19	.18	.19
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06½	.05½	.06½	.05½	.06½
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05¾		.05¾		.05¾	
150, 3 color	.10¾	.12¼	.10¾	.12¼	.10¾	.12¼
180, 3 color	.15	.16	.15	.16	.15	.16
200, 3 color	.16½	.17	.17	.17½	.17	.17½
220, 3 color	.20	.21	.21	.22	.21	.22
600, steam refined	.09½	.10½	.09½	.10½	.09½	.10½
650, steam refined	.15	.16	.16	.17	.16	.17
600, Pennsylvania Flash	.15½	.16½	.15½	.16½	.15½	.16½
630, Pennsylvania Flash	.23½	.24½	.23½	.24½	.23½	.24½
600, E filtered	.15	.17	.15	.17	.15	.17
600, D filtered	.19	.20	.19	.22	.19	.22
Pennsylvania Bright Stocks below 35 C.T.	.21		.21		.21	
Pennsylvania Bright Stocks above 35 C.T.	.18½	.19½	.19	.20	.19	.20
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06¼	.06½	.06¼	.06½	.06¼	.06½
200 vis., 3 color, pale oil	.08½	.09	.08½	.09	.08½	.09
300 vis., 3 color, pale oil	.09¾	.10	.09¾	.10	.09¾	.10
500 vis., 3½ color, pale oil	.11	.11¼	.11	.11¼	.11	.11¼
750 vis., 3½ color, pale oil	.12½	.12¾	.12½	.12¾	.12½	.12¾
1,200 vis., 3½ color, pale oil	.15	.15¼	.15	.15¼	.15	.15¼
2,000 vis., 4 color, pale oil	.16	.16½	.16	.16½	.16	.16½
200 vis., 5-6 color, red oil	.07¾	.08	.07¾	.08	.07¾	.08
300 vis., 5-6 color, red oil	.09	.09¼	.09	.09¼	.09	.09¼
500 vis., 5-6 color, red oil	.10¼	.10½	.10¼	.10½	.10¼	.10½
750 vis., 5-6 color, red oil	.11¾	.12	.11¾	.12	.11¾	.12

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

1,200 vis., 5-6 color, red oil	.14	.14½	.14	.14½	.14	.14½
2,000 vis., 6 plus color, red oil	.16	.16¼	.16	.16¼	.16	.16¼
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 5-6 color	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
400 vis., 5-6 color	.12	.12½	.12	.12½	.12	.12½
500 vis., 4½-5 color	.13	.13½	.13	.13½	.13	.13½
500 vis., 5-6½ color	.13	.13¾	.13	.13¾	.13	.13¾
600 vis., 6½ plus color	.13½	.14½	.13½	.14½	.13½	.14½

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Dec. 2		Nov. 25		Nov. 18	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.06¼	.07	.06¾	.07	.06¾	.07
Kerosene, water white, 41-43	.06¼	.06½	.06	.06½	.06¼	.06¾
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 28 gravity plus	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tauk car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02⅞		.02⅞	
125-127 a.m.p., per lb.	.03⅛		.03⅛		.03⅛	
130-132 a.m.p., per lb.	.03½		.03½		.03½	
133-135 a.m.p., per lb.	.04⅛		.04⅛		.04⅛	
135-137 a.m.p., per lb.	.04⅜		.04⅜		.04⅜	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents per barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Dec. 2	Nov. 25	Nov. 18
600, steam refined cylinder stocks, in bbls.	.16⅛	.16¼	.17
635, steam refined	.18½	.18½	.19
650, steam refined	.23	.23	.23½
600, Pennsylvania Flash	.23½	.23½	.24
630, Pennsylvania Flash	.29½	.29½	.30
600, Warren E	.23½	.23½	.24
600, Oil City E	.22½	.22½	.23
Light 140-150 Bright Stocks	.26	.27	.29
Dark 140-150 Bright Stocks	.24	.25	.27

LOS ANGELES EXPORT PRICES

	Dec. 2		Nov. 25		Nov. 18	
Kerosene, water white	.04¾	.06	.04¾	.06	.04¾	.06
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.07½	.06½	.07½	.06½	.07½
*60-62, 400 endpoint gasoline	.08	.09¼	.08	.09¼	.08	.09¼

*For coastwise and off-shore shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (Oct. 28) ..... $ .75
Other fields ..... See gravity table

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas
Crane-Upton-Crockett, Howard and Glasscock, Mitchell and Ector ..... See gravity table, Column 3
Pecos and Winkler ..... See gravity table, Column 9
Chalk† (April 10, 1930) ..... $ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Oct. 30, 1930) .$ .70
Carterville, Sarepta and Cotton Valley, below 36 gravity ..... See gravity table
Bellevue (Oct. 30, 1930) 1.00
Urania (Oct. 30, 1930) ..... .75
Calion, heavy (Oct. 30, 1930) ..... .70
East El Dorado (Oct. 30, 1930) ..... .70
Other fields ..... See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co. Calion posted by Gulf Refining Co.

GULF COAST

Grade A (Oct. 28, 1930)* $1.00
Grade B, 25° and upward .. See gravity table
Jennings, La. (Oct. 30, 1930)† ..... .80
Refugio (light) ..... Same as Grade B
Refugio (heavy) (Oct. 28, 1930)* ..... .75
Markham (Oct. 28)‡ ..... .85
High Island (Oct. 30, 1930)† ..... .75

*Humble Oil & Refining Co. †Gulf Refining Co. of Louisiana. ‡Texas Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles (Feb. 15, 1930) ..... $ .87
33 gravity and above ..... .87
Under 33 gravity ..... .65
Dutton Creek (Oct. 28, 1930) 1.01
Rock Creek, Wyo. (Oct. 28, 1930) 1.01
Salt Creek ..... See gravity table
Big Muddy (Oct. 28, 1930) 1.00
Grass Creek, heavy (July 27, 1928) ..... .90
Grass Creek, light (Oct. 28, 1930) 1.25
Mule Creek (May 21, 1929) 1.20
Elk Basin (Oct. 28, 1930) 1.25
Lance Creek (Oct. 28, 1930) 1.33
Poison Spider (Mar. 14, 1927) 1.00
Notches (Mar. 14, 1927) ..... .65
Rex Lake (Feb. 22) 1.10
Osage (Nov. 1, 1930) ..... .85
Lost Soldier (Oct. 28) ..... .80
Hamilton Dome (Mar. 14, 1927) ..... .85
Greybull (Oct. 28, 1930) 1.25
Torchlight (Oct. 28, 1930) 1.25
Cat Creek (Oct. 28, 1930) 1.25
Pondera (Montana) (Oct. 28, 1930) 1.45
Sunburst (Montana) (Oct. 28, 1930) 1.55
Hogback (Feb. 15, 1930) 1.40
Artesia (New Mexico) (Oct. 28, 1930) .. .75
Lea County ..... See gravity table
Border, Mont. 1.55
Red Coulee, Alberta 1.55

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Ohio Oil Co. and Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co.

(Continued on Page 146)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Oklahoma-Kansas N. C. Texas	2 North La.-Ark.	3 Crane, Upton, Ector, Crockett, Howard, Glasscock, Mitchell, (West Texas) Lea, N. M.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Pecos-Winkler (West Texas)	10 Grade B Gulf Coast and Refugio, Texas
Below 25	..	..	.50	....	....	....	....	....	.55	.75
25 to 25.9	....	....	.52	....	....	....	....	....	.57	.92
26 to 26.9	....	....	.54	....	....	....	....	....	.59	.94
27 to 27.9	....	....	.56	....	....	....	....	....	.61	.96
28 to 28.9	....	....	.58	....	....	....	....	....	.63	.98
Below 29	.65	.65	....	....	.56	.45	....	.54	....	....
29 to 29.9	.69	.69	.60	....	.54	.49	.69	.58	.65	1.00
30 to 30.9	.73	.73	.62	....	.58	.53	.73	.62	.67	1.02
31 to 31.9	.77	.77	.64	....	.62	.57	.77	.66	.69	1.04
32 to 32.9	.81	.81	.66	....	.66	.61	.81	.70	.71	1.06
33 to 33.9	.85	.85	.68	....	.70	.65	.85	....	.73	1.08
34 to 34.9	.89	.89	.70	....	.74	.69	.89	....	.75	1.10
35 to 35.9	.92	.92	.72	....	.77	.72	.92	....	.77	1.12
36 to 36.9	.95	.95	.74	....	.80	.75	.95	....	.79	1.14
37 to 37.9	.98	.98	....	....	.83	.78	.98	....	....	1.16
38 to 38.9	1.01	1.01	....	....	.86	.81	....	....	....	1.18
39 to 39.9	1 04	1.04	....	....	.89	.84	....	....	....	1.20
40 and above	1.07	1.07	....	....	.92	.87	....	....	....	1.22

Column 1—Carter Oil Co. posted above prices for Oklahoma and Kansas on October 28. Humble Oil & Refining Co. posted same for North Central Texas on October 28. Magnolia Petroleum Co. posted same for Kansas, Oklahoma and North Central Texas on October 27 from 29 degrees upward, but posted below 26 degrees at 53 cents; 26-26.9 degrees at 57 cents; 27-27.9 degrees at 61 cents; 28-28.9 degrees at 65 cents. Stanolind Crude Oil Purchasing Co. on November 1 adopted the schedule as listed in table; Prairie Oil & Gas Co. adopted the same on November 1, other companies following. North Central Texas, for the purpose of this table, includes North Texas, Ranger district, Mexia, Powell, Richland, Wortham, Van, Lytton Springs, Currie, Nocona, Moran and Corsicana (light oil).

Column 2—The Texas Company posted above prices on Caddo and Red River Crude, up to 39-39.9 degrees. It also posted 40-40.9 degrees at $1.07; 41-41.9 degrees at $1.10; 42-42.9 degrees at $1.13; 44-44.9 degrees at $1.16, and 44 degrees and above $1.19. Standard Oil Co. posted schedule as listed in table on October 30; Magnolia Petroleum Co. on October 30 posted prices as listed, starting at 29 degrees, but posted below 26 degrees, 53 cents; 26-26.9 degrees, 57 cents; 27-27.9 degrees, 61 cents; 28-28.9 degrees, 65 cents. Louisiana Oil Refining Co. adopted Standard of Louisiana prices on October 30. North Louisiana and Arkansas fields included in table are Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer, Cotton Valley, Sarepta-Carterville, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. on October 28.

Column 4—Companies quit posting but crude takes present Hutchinson-Carson prices.

Column 5—Humble Oil & Refining Co., Magnolia and Prairie, October 28. Prairie ceased posting and purchasing in all Panhandle fields November 27.

Column 6—Humble Oil & Refining Co., October 28.

Column 7—Midwest Refining Co. on October 28. All crude over 37 degrees 98 cents.

Column 8—Louisiana Oil & Refining Co. and Atlantic Oil Producing Co., October 30.

Column 9—Humble Oil & Refining Co., October 28.

Column 10—Humble Oil & Refining Co., October 28. On October 30, Gulf Refining Co. of Louisiana and Gulf Pipe Line Co. of Texas posted as follows for Grade B: Below 25 degrees, 69 cents; 25-25.9 degrees, 71 cents, with a 2-cent differential for each degree upward to and including 40 degrees and above at $1.01. The Texas Company adopted above schedule November 1.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co. (effective September 15, 1930), Union Oil Co. (effective September 15, 1930)

Gravity—	1 Long Beach, Seal Beach, Alamitos Hts., Huntington Beach, Inglewood, Torrance, Richfield, Olinda, Brea Canyon	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria, Coalinga	7 Wheeler Ridge	8 Orcutt, Ventura, Rincon	9 Ventura Avenue	10 Elwood Terrace	11 Athens, Rosecrans, Domingues
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1 07	1 04	1.02	1.05	1 01	1.02	1.02	1.02	1 00	....	....
24 to 24.9	1.12	1.08	1.06	1.08	1.05	1.04	1.04	1.08	1.05	....	1.12
25 to 25.9	1.17	1.12	1.10	1.11	1.09	1.06	1.06	1.11	1.10	....	1.17
26 to 26.9	1.22	1.16	1.14	1.15	1.13	1.08	1.08	1.15	1.15	....	1.22
27 to 27.9	1 26	1.21	1.18	1.19	1.18	1.11	1.10	....	1.19	....	1 27
28 to 28.9	1.30	1.25	1.23	1.23	1.23	1.15	....	....	1.23	....	1.32
29 to 29.9	1.34	1.29	1.29	1.26	1 28	1.19	....	....	1 27	....	1.37
30 to 30.9	1 38	1 33	1.35	1.29	1.33	1.23	....	....	1.31	....	1.42
31 to 31.9	1.43	....	1.40	....	1.38	1.27	....	....	1.36	....	1.47
32 to 32.9	1.48	....	1.47	....	1.43	1.31	....	....	1.41	....	1.52
33 to 33.9	....	....	1.53	....	1.48	1.35	....	....	1.47	....	1.57
34 to 34.9	....	....	1.59	....	1.53	1.39	....	....	1.53	1.32	1.62
35 to 35.9	....	....	1.65	....	1.58	1.43	....	....	1.59	1.39	1.66
36 to 36.9	....	....	....	....	1.63	....	....	....	....	1.46	1.72
37 to 37.9	....	....	....	....	1.68	....	....	....	....	1.53	1.78
38 to 38.9	....	....	....	....	1 73	....	....	....	....	1.60	1.84
39 to 39.9	....	....	....	....	1 78	....	....	....	....	1 66	1.90
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	1.96
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.02
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.08

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11 the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents. Fruitvale, posted by General Petroleum Co., 11-13.9, 50 cents; 14 gravity and above, 55 cents.

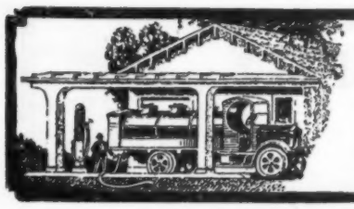
Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

Column 5—Price change posted by Standard of California September 16.

(Continued on Page 154)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Dec. 2.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago†	16.0	17.0	3.0	11.0
Decatur, Ill.	13.0	15.0	3.0	11.0
E. St. Louis	15.7	14.7	3.0	10.2
Joliet	16.4	17.4	3.0	11.0
Peoria	15.0	14.0	3.0	11.0
Quincy	16.2	17.2	3.0	10.8
Davenport, Ia.	16.5	16.5	3.0	11.03
Des Moines	15.5	15.5	3.0	11.3
Keokuk	16.5	17.5	3.0	11.3
Sioux City	16.1	15.9	3.0	10.9
Duluth, Minn.	17.5	17.5	3.0	11.9
Mankato	14.5	14.0	3.0	11.7
Minneapolis	17.0	17.0	3.0	11.9
La Crosse, Wis.	16.2	17.2	2.0	12.0
Milwaukee	15.1	15.0	2.0	10.9
Madison	15.3	15.3	2.0	11.1
Detroit, Mich.	13.3	12.5	3.0	12.7
Grand Rapids	15.7	16.7	3.0	13.6
Saginaw	14.3	14.3	3.0	12.8
Evansville, Ind.	17.1	18.1	4.0	11.9
Indianapolis	16.9	17.9	4.0	12.1
South Bend	17.4	18.4	4.0	12.2
Fargo, N. D.	18.9	19.9	3.0	13.9
Huron, S. D.	17.5	17.5	4.0	12.7
Sioux Falls	17.8	16.4	4.0	12.4
K. C., Mo.	14.9	14.9	3.0	9.6
Springfield*	15.9	16.9	3.0	10.5
St. Louis*	12.9	13.0	2.5	10.3
St. Joseph	15.6	11.9	2.0	10.1
Wichita, Kans.	14.8	13.8	3.0	9.8
Bartlesville, Okla.	15.5	13.5	4.0	9.5

*State tax 2 cents; remainder city tax.

†Effective June 2, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline; 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Wh'ls'le price	Retail price	Incl'ds tax of	tank wagon
Fresno	23.0	21.0	3.0	17.0
San Francisco	23.0	21.0	3.0	16.5
Los Angeles	22.5	20.5	3.0	15.5
Reno, Nev.	28.0	26.0	4.0	19.0
Portland, Ore.	24.5	20.0	4.0	16.5
Seattle, Wash.	23.5	20.0	3.0	16.5
Tacoma	23.5	18.5	3.0	16.5
Spokane	27.5	22.0	3.0	20.5
Phoenix, Ariz.	19.5	22.5	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	17.0	4.0	11.0
Fort Worth	14.0	17.0	4.0	10.0
Houston	16.0	19.0	4.0	11.0
San Antonio	13.0	17.0	4.0	11.0
El Paso	16.0	20.0	4.0	12.0
Texarkana	17.0	17.0	4.0	13.0
Muskogee	15.0	18.0	4.0	9.0
Okla. City	13.0	16.0	4.0	10.0
Tulsa	14.0	18.0	4.0	10.0
Ft. Smith, Ark.	15.5	16.5	5.0	12.0
Little Rock	14.0	15.0	5.0	12.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	17.25	18.25	4.0	11.25
McCook	18.75	20.75	4.0	12.75
Norfolk	17.25	17.25	4.0	11.75
N. Platee	18.75	20.75	4.0	13.50
Scottsbluff	18.75	20.75	4.0	13.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	18.0	19.0	4.0	†15.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	13.5	14.5	6.0	12.0
Baton Rouge	14.5	15.5	5.0	13.0
Alexandria†	15.5	16.5	6.0	13.0
Lafayette*	15.5	16.5	6.0	13.0
Lake Charles*	15.5	16.5	6.0	13.0
Shreveport	14.5	15.5	4.0	13.0
Knoxville, Tenn.	18.0	19.0	5.0	15.0
Memphis	16.0	17.0	5.0	12.5
Chattanooga	17.5	18.5	5.0	13.0
Nashville	17.0	18.0	5.0	15.0
Bristol	19.0	20.0	5.0	14.0
Lt. Rock, Ark.	15.0	16.0	5.0	12.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

One-cent discount allowed off station price on all cash purchases. All other station discounts withdrawn October 2, 1930.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	20.0	22.0	6.0	13.5
Newark	12.5	14.5	2.0	10.5
Annapolis, Md.	16.0	17.0	4.0	11.0
Baltimore	15.2	16.2	4.0	9.5
Cumberland	17.0	18.0	4.0	12.0
Wash'gton, D.C.	13.7	14.7	2.0	10.7
Danville, Pa.	17.8	18.8	5.0	11.8
Norfolk, Va.	16.3	17.3	5.0	10.0
Petersburg	17.3	18.3	5.0	11.3
Roanoke	18.0	18.0	5.0	12.0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16.5	17.5	4.0	11.5
Keyser	17.1	18.1	4.0	12.0
Parkersburg	15.2	16.2	4.0	10.2
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	18.3	19.3	5.0	12.3
Hickory	18.6	19.6	5.0	12.6
Mt. Airy	18.5	19.5	5.0	12.5
Salisbury	18.5	19.5	5.0	12.5
Charleston, S. C.	17.3	18.3	6.0	10.3
Columbia	19.2	20.3	6.0	12.3

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	20.0	22.0	6.0	13.5
Augusta	20.0	22.0	6.0	15.5
Macon	20.0	22.0	6.0	13.0
Savannah	18.0	20.0	6.0	14.0
Birm'ham, Ala.	18.0	20.0	5.0	14.5
Mobile	17.0	19.0	4.0	10.5
Montgomery	18.0	20.0	4.0	15.0
Clarks'le, Miss.	18.0	18.0	5.0	11.0
Jackson	15.0	17.0	5.0	13.0
Natchez	18.0	20.0	5.0	13.0
Gulfport	18.0	18.0	5.0	13.0
Vicksburg	18.0	20.0	5.0	13.0
Jack'ville, Fla.	17.0	19.0	4.0	14.0
Miami	19.0	21.0	4.0	14.0
Pensacola	20.0	21.0	6.0	13.5
Tampa	18.0	20.0	5.0	13.0
Lexington, Ky.	17.0	18.0	5.0	14.5
Covington	18.0	20.0	5.0	14.5
Louisville	16.0	18.0	5.0	12.0
Ashland	18.0	20.0	5.0	15.0
Catlettsburg	18.0	20.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	15.8	17.8	2.0	15.8
New York*	14.3	16.3	2.0	14.3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	14.5	16.5	2.0	13.5
Augusta, Me.	19.3	21.3	4.0	14.3
Manch't'r, N.H.	19.4	21.4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	14 0	19 0	...	12.0
Philadelphia	14.0	19.0	...	12.0
Scranton	14.0	19 0	...	12.0
Allentown	14.0	19.0	...	12.0
Altoona	14 0	19.0	...	12.0
Erie	14.0	18.0	...	11.0
Dover, Del.	17 0	19 0	3.0	12.0
Wilmington	17.0	19.0	3.0	12.0
Springf'd, Mass.	17.5	19.5	2.0	10.0
Worcester	17.3	19.3	3.0	10.0
Boston	14 5	16.5	2.0	10.0
Providence, R.I.	12.7	14.7	2.0	10.0
Hartford, Conn.	17.5	19.5	2.0	10.0
New Haven	17.6	19.6	2.0	10.0

*Includes tax of 3 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	16 0	19 0	4.0	13 5
Pueblo	17.0	20.0	4.0	13.5
Grand Junction	18.0	21.0	4.0	17.0
Casper, Wyo.	17.0	20.0	4.0	12.0
Cheyenne	18.0	21.0	4.0	13.5
Butte, Mont.	19.0	22.0	5.0	18.0
Billings	20.0	23.0	5.0	16.5
Great Falls	20.0	23.0	5.0	18.0
Helena	22.5	25.5	5.0	18.0
Salt Lake, Utah	20.0	23 0	3.5	17.0
Albu'que, N. M.	16.0	18.0	5.0	15.0
Boise, Idaho	23.5	26.5	5.0	19.0
Twin Falls	23.5	27.5	5.0	19.0

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	12.0	8.0
V.M.&P. naphtha	14.0	9.5
Cleaner's naphtha	16.2	11.0
Stanisol	16.2	11.0

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

TANK WAGON CHANGES

Standard Oil Co. of Indiana reduced the tank wagon and tank prices on all grades of special naphthas November 25 as shown in the accompanying table.

Magnolia Petroleum Co. advanced the gasoline tank wagon and station prices 1 cent in Fort Smith, Ark., November 10, and in Little Rock, Ark., November 8.

Standard Oil Co. of Kentucky reduced the gasoline station price 1 cent in Clarksdale, Miss., November 21.

CRUDE OIL PRICE CHANGES

The Champlin Refining Co., Enid, Okla., effective November 17, posted the following prices for Texas Panhandle crude oil: 32 degrees, 33 cents with a 1-cent differential for each degree upward to 40 degrees and above, which was posted at 41 cents. The same company posting in Kansas effective November 17 started with 32 degrees at 37 cents with a 2-cent differential for each degree upward to 40 degrees and above at 53 cents.

The Cosden Oil Co., Big Spring, Tex., on November 28 posted a flat price of 50 cents per barrel for West Texas crude. The company's old price was 25 gravity 50 cents with a 2-cent differential for each degree upward to 36 gravity at 74 cents.

ANOTHER SINCLAIR TANKER

QUINCY, Mass., Dec. 1.—The Harry F. Sinclair, Jr., a $1,500,000 oil tanker constructed for the Sinclair Oil Co., was launched today at the Fore River plant of the Bethlehem Ship Building Corp. Miss Mary L. Watts, daughter of Arthur E. Watts, chief of navigation for the Sinclair corporation, christened the craft.

The Harry F. Sinclair, Jr., is a sister ship of the Virginia Sinclair which was launched a month ago. She is 435 feet long and 12,540 tons displacement.

CONTINENTAL GETS CONTRACT

RICHMOND, Va., Dec. 1.—The Continental Oil Co. has been awarded a contract to supply the city with 1,000,000 gallons of gas oil for use in making gas at the city gas works. The company secured the contract on a bid of 4 cents per gallon. The oil will supply the city's needs for the first quarter of 1931.

CHANGES AT BARNSDALL'S OFFICE

CHICAGO, Nov. 29.—D. C. Miller who has represented the Barnsdall Refineries, Inc., in Wisconsin has been given a position in the local offices of the company. He is succeeded by William J. Nelson, formerly with the Vacuum Oil Co., who will make his headquarters in Milwaukee.

CRUDE OIL PRICES

(Continued from Page 145)

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Oct. 28, 1930)*	$0.90
Luling (Oct. 28, 1930)†	.75
Mirando (Oct. 28, 1930)*	.75
Pettus (Oct. 28, 1930)*	1.10
Salt Flat (Oct. 28, 1930)*	.90
Thrall‡	...
Lytton Springs (Lockhart).See gravity table	
Dobrowolski (Oct. 25, 1930)‖	...
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01
Somerset (Oct. 25, 1930)‖	...
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective Nov. 12, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$1.85
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.45
Corning Grade Oil in Buckeye Pipe Line Co.'s Lines (Oct. 28, 1930)	1.30
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (Aug. 1, 1930)	1.14
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky)	1.10
Wayne District Oil in Cumberland Pipe Lines	1.17
Tide Water Pipe Co.	
Bradford district (Nov. 12, 1930)	2.15
Allegany district (Nov. 12, 1930)	2.15
Pure Oil Co.	
Cabin Creek, W. Va. (Nov. 12, 1930)	$1.70
Kelly Creek, W. Va. (Nov. 12, 1930)	1.70
Bradford Hollow, W. Va. (Nov. 12, 1930)	1.70

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective Oct. 28, 1930)

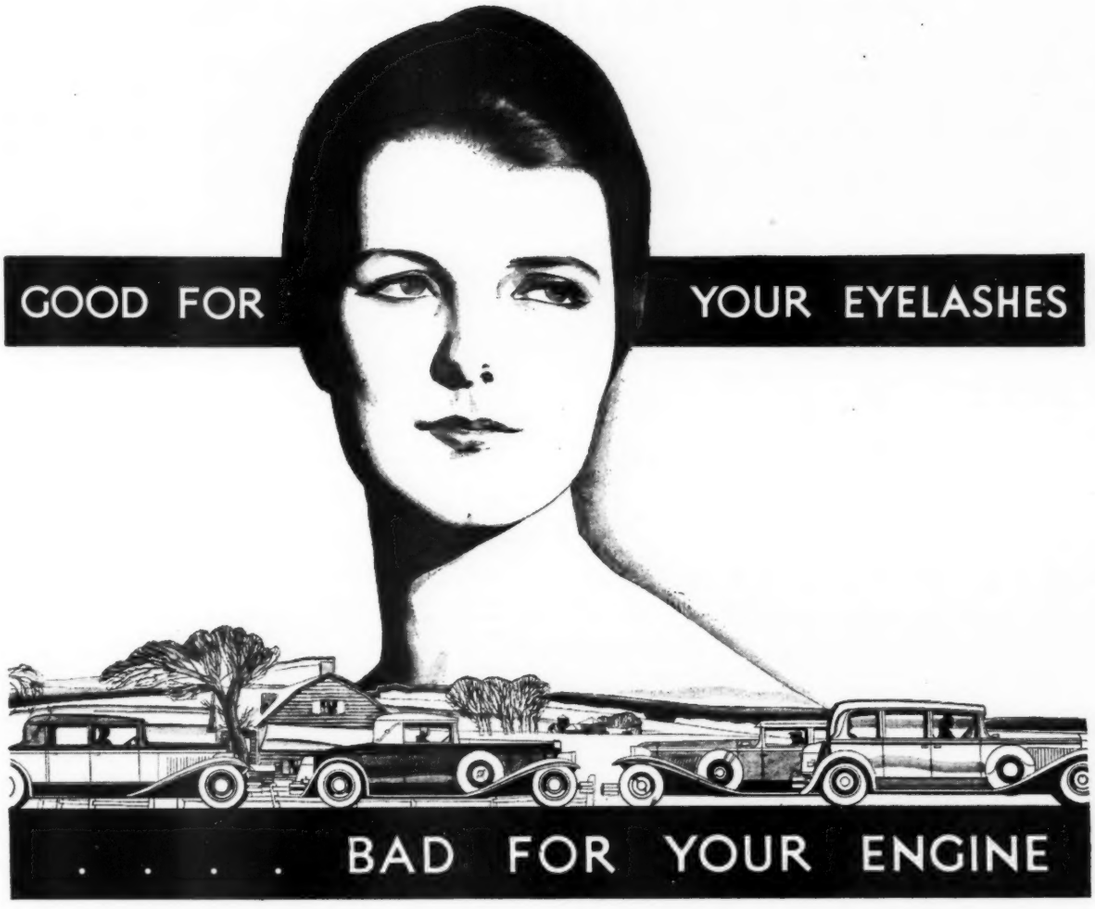
Lima	$1.10
Wooster	1.40
Illinois	1.30
Indiana	.87
Princeton	1.30
Plymouth	.88
Western Kentucky	1.15
Midland, Mich.*	1.10
Dundee, Mich. (Oct. 28)‖	...
	...Same as Mid-Continent gravity scale
Upper and Lower Traverse Sands, Mich. (Oct. 28)‖	...
	...Same as Mid-Continent gravity scale
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky.§	1.10
Oil Springs (Canada) (Oct. 28)¶	1.57
Petrolia (Canada) (Oct. 28)¶	1.50

*Posted by Pure Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$0.56

*F.o.b. ship, based on October transactions and exclusive of taxes and bar dues.



PETROLEUM JELLY . . . a familiar friend in every household . . . is the same sticky salve that makes motor oils thick and sluggish in winter.

The great Sinclair refineries, with modern refrigerators and separators, remove this paralyzing petroleum jelly from Sinclair Opaline at as low as 60° F. below zero. (Opaline is guaranteed to flow at zero.) With Opaline your customers are not forced to change to "light" motor oils for easy starting in winter!

Opaline is refined from paraffin base crudes according to the Sinclair Law of Lubrication.

(Write for booklet explaining this famous Sinclair Law . . . it's a sensational sales builder you shouldn't overlook!)

This is the story and above is the girl who'll carry it into millions of homes from coast to coast. Cash in on the sweeping Opaline sales.

* * *

Send a post card to our nearest office and a Sinclair salesman will tell you all about it. Sinclair Refining Company (Inc.), New York, Atlanta, Chicago, Fort Worth, Houston, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR OPALINE
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MOTOR OIL

Deterding Optimistic on Future of Oil

Says Royal Dutch-Shell in Splendid Position, No Financing Necessary. Standard Dividend Payments a Record

NEW YORK, Dec. 2.—Notwithstanding unsettled conditions in the petroleum industry, earnings and cash position of the Royal Dutch-Shell group are "splendid" and there is no new financing necessary for the group, said Sir Henri Deterding, managing director, in London yesterday. Speaking before an extraordinary meeting of stockholders Sir Henri declared that bankers had offered to take over 25 per cent of 4 per cent bonds of Royal Dutch on the same basis as the last issue but that the offer had been refused as "the company has an abundance of liquid cash on hand on which only a low interest rate is received."

Discussing the activities of the group Sir Henri said:

"There is no reason whatever for any fear as to the financial results for this year. Your company's financial condition and earning capacity are splendid and can be compared with those of any other leading oil company. We remain optimistic on the future of the oil industry. The permanent stockholder in Royal Dutch has always profited over the past 40 years and we have every confidence that he will in the coming years.

"It has always been the policy of Royal Dutch to write off vast amounts. The losses in Russia were immediately written off 100 per cent. Enormous stocks of oil of the affiliated companies appear in the annual balance sheets at cost or market value, whichever is lower. This will benefit shareholders as soon as the present oil situation changes for the better."

Sir Henri declared that subsidiaries of Royal Dutch-Shell have withheld all capital expenditures for expansion which were not immediately necessary.

Standard Dividend Payments

Cash dividend payments of the Standard Oil group of companies for the year 1930 will reach a new high record of $286,666,728, an increase of $17,020,801 over 1929, the previous record year according to figures compiled by Carl H. Pforzheimer & Co. Fourth quarter payments of this group will also establish a new record at $83,047,644, compared with $75,063,856 in the last quarter of 1929 and $68,306,015 in the third quarter of 1930.

The distribution of record cash payments to stockholders for 1930 indicates the underlying strength of this group of companies during a period of general depression. It is noteworthy that none of the leading Standard Oil units failed to declare their regular quarterly dividends during the year, while several made extra distributions. Imperial Oil, Ltd., in the final quarter of 1930 declared an extra dividend of 50 cents a share in addition to the regular quarterly dividend of 12½ cents a share, the extra disbursement aggregating in excess of $13,000,000.

Humble Oil & Refining Co. also declared an extra dividend of 50 cents a share, payable January 1, 1931. This extra distribution amounting to nearly $1,500,000 is not included in the 1930 totals. Standard Oil Co. of New Jersey continued the extra quarterly distribution of 25 cents a share in addition to the regular quarterly dividend of 25 cents a share throughout 1930, while Standard of Indiana continued its regular dividend rate of $2.50 a share per annum on the increased capital resulting from the exchange of Indiana stock for stock of the Pan American Petroleum & Transport Co.

Standard Oil Co. of California declared a stock dividend of 2 per cent in the final quarter of 1930, not included in the figures given above, in addition to the regular quarterly cash distribution.

Leading Standard Oil units which declared extra distributions in the final quarter in addition to Imperial Oil and Standard of New Jersey were Vacuum Oil Co., Standard Oil Co. of Kentucky, Chesebrough Manufacturing Co. and Prairie Pipe Line Co.

Total cash dividend payments by Standard Oil Co. of New Jersey for the year 1930 including the last quarterly declaration, will exceed $50,000,000 which is the largest amount paid from earnings by any Standard Oil unit in a single year.

Dividend payments compare as follows:

FULL YEAR

1930	$286,666,728
1929	269,645,927
1928	218,740,335
1927	213,698,223
1926	200,327,594

Western Exploration

Western Exploration Co. has declared a dividend of 2½ cents per share payable December 20, 1930, to stockholders of record of December 15.

Indian Refining

Report of Indian Refining Co. and subsidiaries for nine months ended September 30, 1930, shows net loss of $2,097,803 after depreciation, interest, amortization, etc. Consolidated income account for nine months ended September 30, 1930, as prepared by auditors from companies' books and records without complete verification of the transactions, follows: Net sales, $14,521,997; costs and expenses, $15,478,526; loss, $956,529; cash discount on sales and other charges, $105,059; loss, $1,061,588; other income, $60,504; loss, $1,001,084; depreciation, $834,565; interest, $221,357; amortization of bond discount and expense, $40,797; net loss, $2,097,803; preferred dividends, $754; deficit, $2,098,557.

Tide Water Associated

Tide Water Associated Oil Co. declared the regular quarterly dividend of $1.50 on the preferred, payable January 2 to stock of record December 12. Tide Water Oil Co. declared the regular quarterly dividend of 20 cents on the common, payable December 31 to stock of record December 12.

Penn-Mex Fuel

Penn-Mex Fuel Co. has declared a dividend of $1, payable December 15 to stock of record December 6. On May 20 and August 22 of the current year similar payment were made.

South Penn Oil

South Penn Oil has declared regular quarterly dividend of 50 cents, payable December 31 to stock of record December 15.

Illinois Pipe Line

Illinois Pipe Line Co. has declared the regular quarterly dividend of $4.50, payable December 15 to stock of record November 15. All but a small percentage of Illinois Pipe Line stock is held by the Ohio Oil Co.

Texon Oil & Land

Texon Oil & Land Co., controlled by Continental Oil Co., has declared an extra dividend of $1 and the regular quarterly dividend of 25 cents on the common stock, both payable December 31 to stock of record December 10. On October 1 an extra dividend of $3 was paid.

Standard of California

The New York Stock Exchange has announced the application of the Standard Oil Co. of California for the listing of 256,920 additional shares of common stock. This new stock is to be used for the payment of a 2 per cent dividend recently declared by the company, in addition to the regular quarterly dividend of 62½ cents in cash.

International Petroleum

International Petroleum Co., Ltd., has declared a dividend of 25 cents, payable December 15 to stock of record November 29.

Phillips Petroleum

Phillips Petroleum Co., declared the

(Continued on Page 154)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week Ended November 26 Sales	Week Ended November 26 High	Week Ended November 26 Low	Week Ended November 26 Close	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
4½	⅝	600	⅞	⅞	⅞	American Maracaibo	(sh)	700,000	N.P.	....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
21	15¼	700	15¼	15¼	15¼	British American		1,311,321	N.P.	20c	10- 1-30	40	20½	55	32¾	62	7⅞
2¾	¾	1,300	1¼	1	1¼	Carib Syndicate		$131,250	25c	....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	16	17,700	19¾	19¼	19½	Cities Service	(sh)	24,290,359	N.P.	30cA†	10- 1-30	58¾	40½	90⅞	54	68⅛	20
93⅞	87½	400	89⅝	89⅝	89⅝	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	10- 1-30	95⅜	87	103½	94½	98¾	84
¾	⅛	400	¼	⅛	⅛	Colombia Syndicate		$2,000,000	$1	....	.....	3⅞	1⅜	3¼	.76	2	½
5⅞	2½	300	2½	2½	2½	Consolidated Royal		$5,000,000	$10	12½cQ	10-25-30	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	3½	600	3⅞	3⅝	3⅞	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	¼	4,200	⅝	½	⅝	Crown Central	(sh)	587,060	N.P.	....	.....	3	.50	3¼	.76	2½	¼
1	⅞	500	1	⅞	⅞	Crown Central (new)		.....	....	....	.....	..	..	..	..	..	..
21¾	4¾	600	6¾	6	6¼	Darby Petroleum (new)		1,019,392	N.P.	25cQ	10-15-30	12	4	33½	3¼	26	6½
11	4⅛	300	4½	4½	4½	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2½	74	2¼	1	11	2
60	30	100	42	42	42	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	16¾	4	21⅜	7½	44	20¾
166⅞	75	200	78¼	78	78¼	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	10- 1-30	118	96¼	165	101⅛	209	115
1¼	⅝	400	¾	¾	¾	Intercontinental Petroleum		$5,682,000	$5	....	.....	2½	.80	3⅜	1	2⅞	⅝
3	1⅛	300	1⅛	1⅛	1⅛	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4⅜	⅜	8,000	⅞	⅞	⅞	Leonard Oil & Development		$50,000,000	$25	....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
29	6¼	100	8⅜	8⅜	8⅜	Lion Oil & Refining	(sh)	250,000	N.P.	50cQ	10-27-30	27½	20	43⅞	20	38⅞	18
55⅞	20⅛	2,300	25⅜	24½	24½	Lone Star Gas	(sh)	5,000,000	N.P.	25cQ	9-30-30	59⅜	37	69⅛	48½	67⅞	28
½	⅛	300	⅛	⅛	⅛	Magdalena Syndicate	(sh)	850,000	$1	....	.....	2⅞	.80	1⅞	.50	1¼	¼
16	5	100	5	5	5	Margay Oils		160,000	N.P.	....	7-10-30	52	12	48½	32	38½	14
7½	1¾	2,100	2	1¾	2	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	12¼	5	8	2¾	6⅜	2¼
¾	⅜	200	⅜	⅜	⅜	Mountain & Gulf		$4,000,000	$1	2cQ	10-15-30	1½	1	1⅜	.76	1½	¼
12½	5⅜	1,600	6⅛	5⅜	5⅜	Mountain Producers		$1,682,182	$10	40cQ	10- 1-30	29¼	22¾	28⅞	19½	22⅞	7
3½	1⅜	100	1⅞	1⅞	1⅞	New Bradford Oil		$1,095,291	$5	12½cQ	10-15-30	5⅞	4⅝	5⅝	4¼	5	2½
7¼	1⅝	600	2⅜	1⅝	2⅜	New Mexico and Arizona		$1,000,000	$1	....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	3	3,200	4¼	4	4	North Central Texas	(sh)	400,000	N.P.	15cQ	9- 2 30	12¾	9½	14¼	8½	18½	6⅛
2½	¼	1,200	⅜	¼	⅜	Pandem	(sh)	489,875	N.P.	....	.....	9⅜	3¼	6	2⅛	3½	½
4⅜	1⅜	100	1⅝	1⅝	1⅝	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	12⅛	7	15⅝	8½	10½	1⅞
..	..	No sales.				Pennok Oil		150,000	N.P.	....	.....	12½	5⅛	7¾	4⅞	7¾	4⅜
10½	4½	200	5	4½	4½	Red Bank Oil	(sh)	250,000	N.P.	....	.....	24⅜	7	18	4⅞	16	9⅝
5⅜	1⅜	1,100	1⅜	1⅜	1⅜	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	15½	3½	12⅞	4⅛	8½	1⅛
8⅝	2	100	3	3	3	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	7	4½	12	4⅛	11	3
2½	1⅜	400	1½	1½	1½	Salt Creek Consolidated	(sh)	1,286,300	$10	10cQ	10- 1-30	8	5¼	7¼	5½	5⅞	1⅞
15¼	5¼	200	7⅜	7⅜	7⅜	Salt Creek Producers	(sh)	1,496,859	$10	50cQ	11- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750,000	$5	....	.....	7	1¼	3½	1	2½	⅞
4½	1¼	200	1¼	1¼	1¼	Venezuelan Petroleum	(sh)	755,090	$5	....	5-15-30	7⅜	4¼	9⅛	4¾	6½	1¾
5	2	100	2	2	2	Woodley Petroleum		$500,000	$1	....	6-30-29	7	4¾	8¼	4⅞	9½	2
2½	⅜	200	⅜	⅜	⅜	Y Oil & Gas		100,000	N.P.	....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week Ended November 26 Sales	Week Ended November 26 High	Week Ended November 26 Low	Week Ended November 26 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
1	⅜	100	⅜	⅜	⅜	Atlantic Lobos		499,448	N.P.	....	.....	..	..	..	..	..	..
25	11¼	300	13	12	12	Borne Scrymser		$1,000,000	$25	$1SA	10-15-30	59	50	56½	44½	46½	25
59	43¾	400	43½	43⅛	43⅛	Buckeye Pipe Line		$10,000,000	$50	$1Q	9-15-30	60	45	76	53	74½	55
184¾	100¼	100	125	125	125	Chesebrough Mfg.		$3,000,000	$25	$1Q*	10-30-30	126	76½	161	117	210	130
65¾	23	50	23	23	23	Cumberland Pipe Line		$1,500,000	$50	$1Q	9-15-30	137	89	114	67	75¾	40
54¾	30	50	30	30	30	Eureka Pipe Line		$5,000,000	$100	$1Q	11- 1-30	68½	47	88	64⅛	70½	42
7	2½	100	3	3	3	Galena Signal Oil		$16,000,000	$100	....	.....	13½	3½	13	4¼	6½	3
119	69¼	1,000	71	69⅞	71	Humble Oil & Refining		$74,103,300	$25	50cQ‡	10- 1-30	68½	54	114¾	59½	128	74⅛
320	303	100	320	315	315	Illinois Pipe Line		$20,000,000	$100	$4.50	9-15-30	182	123¾	290½	176½	340½	260
30	15⅞	700	17⅞	17⅝	17⅝	Imperial Oil of Canada (new)	(sh)	26,421,768	N.P.	12½cQ	9- 2-30	64¾	37¾	104	56¾	41	22
41	20	900	22	20	20	Indiana Pipe Line (new)		$3,000,000	$10	50cQ‡	11-15-30	94½	61	91⅞	74⅜	41⅞	26
24	13⅜	2,500	15¼	14¾	14¾	International Petroleum (new)	(sh)	14,247,088	N.P.	12½cQ‡	9-16-30	29	28¼	55	35	30⅜	15
22⅜	13	x100	14	14	14	National Transit		$6,362,500	$12.50	25cQ‡	9-15-30	24	13½	32⅜	19⅜	25⅛	10⅛
21¾	10⅛	300	15	14⅛	15	New York Transit		$1,000,000	$10	40cQ†	9-15-30	44½	31¼	75	38½	17½	10
54	26½	100	26½	26½	26½	Northern Pipe Line		$2,000,000	$50	$2SA	7- 1-30	100	70	69	56½	63	41
32	15¾	1,000	17	15⅞	16⅜	Penn Mex Fuel		$10,000,000	$25	$1	8-22-30	39	12	84	28	44½	20
33	7½	200	8⅜	7⅝	7⅝	Solar Refining		$4,000,000	$25	....	12-20-29	..	..	..	..	50	29
20⅞	8¾	200	9	8¾	9	Southern Pipe Line		$1,000,000	$10	5cQ	9- 2-30	27¼	15½	19	15	22½	13
45⅞	22	100	24	24	24	South Penn Oil		$30,000,000	$25	50cQ	9-30-30	41½	35	71⅞	36¾	60¼	35⅛
64	32½	50	32½	32½	32½	Southwest Pennsylvania Pipe Lines		$1,750,000	$50	$1Q	1-10-29	83	55½	102	70	70	60
59⅞	35⅛	8,200	36⅞	36¾	36½	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	9-15-30	81½	64⅜	95⅞	70⅞	63	45
40½	20⅛	1,800	23⅞	23	23½	Standard Oil of Kentucky		$25,654,516	$10	40cQ	9-30-30	130	111½	179¾	122¼	46⅞	29
48⅞	35¼	100	38	38	38	Standard Oil of Nebraska		$4,649,225	$25	62½cQ‡	9-20-30	49½	40	54⅞	39⅞	50¼	40
108½	50⅛	100	56¾	56¾	56¾	Standard Oil of Ohio		$14,000,000	$25	62½cQ	10- 1-30	87½	72	134	71	129	60
10	4	100	4	4	4	Swan-Finch Co.		$861,466	$25	.42¾cQ	1-15-29	21	14½	23½	16	18	10
97⅞	59⅛	2,300	65⅝	64⅛	65¼	Vacuum Oil Co.		$126,180,350	$25	$1Q	9-20-30	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bros. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week Ended November 26 Sales	Week Ended November 26 High	Week Ended November 26 Low	Week Ended November 26 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	100	21⅜	21⅜	21⅜	Amerada Corp.	(sh)	922,075	N.P.	50cQ	10-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17½
37	8⅛	1,300	11	9½	10⅝	American Republics Corp.	(sh)	209,180	N.P.	....	.....	82½	35⅛	85	51⅛	64¾	12½
51	30⅞	10	35	35	35	Associated Oil		$57,260,300	$25	50cQ	9-30-30	50¼	35	53⅜	37½	47¼	34½
51⅜	18⅝	2,500	22⅛	21⅝	21⅝	Atlantic Refining		$66,763,775	$25	25cQ†	9-15-30	131⅜	104	66⅜	50	77⅞	30
34	12⅝	4,900	15	14⅝	14⅜	Barnsdall Corp. A		$56,546,600	$25	50cQ	11- 6-30	35½	20¾	54	20	49⅛	20
30½	10	8,700	12⅜	12	12⅛	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	12-15-27	..	..	..	..	47⅛	18
71¼	28⅛	900	30¼	30	30⅛	General Asphalt	(sh)	413,333	N.P.	$1Q	9-15-30	96¾	65	94⅞	68	94¾	42¼
116⅞	33⅛	3,400	42⅛	40⅛	40½	Houston Oil		$24,968,600	$100	....	10-17-30	175¾	60⅛	167	79	109	26
11⅜	7⅝	2,100	9⅝	9⅛	9⅛	Houston Oil (new)	(sh)	998,744	$25	....	.....	..	..	..	..	..	..
32	11⅛	500	14⅜	14⅛	14⅛	Independent Oil & Gas	(sh)	1,362,295	N.P.	37½c	10- 2-30	32¾	17⅝	38⅜	21¾	39⅜	17¾
28⅜	3¼	3,600	4⅜	4¼	4¼	Indian Refining		$12,565,070	$10	....	.....	12⅛	7⅝	39⅝	9	53	13⅛
29½	21¼	100	27⅛	27⅛	27⅛	Lago Oil & Transport	(sh)	3,992,122	N.P.	....	5- 2-27	37¾	20½	39⅛	27⅜	38⅜	16½
12	4⅝	200	5⅛	5⅛	5⅛	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	18⅛	10	19¾	9⅜	18	7
10⅜	2	200	2¾	2¾	2¾	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	22¾	12	25½	12½	18½	5⅛
37	9¾	4,000	13	12⅝	12¾	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	9¼	3	72	4⅝	59⅜	8¼
33	15½	2,800	17	16⅝	16⅝	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	11-15-30	39⅜	25½	44½	25⅛	39⅞	22⅛
32	16¼	3,200	19	18¼	18¾	Ohio Oil	(sh)	6,648,052	N.P.	50cQ	9-15-30	67¼	52	84	58½	79⅞	64¼
64¼	42	200	43	43	43	Pan American P. & T.		$50,084,700	$50	....	12-20-27	65⅞	40⅛	50⅞	38¼	69	40½
67½	41	200	43	43	43	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	66⅜	40¼	58⅞	37¾	69¼	40½
		No sales.				Pan American Western "B"		400,000	N.P.	....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	2⅛	400	2⅝	2⅝	2⅝	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	18⅞	8	21¾	11½	15¼	3
80	47½	100	70	70	70	Panhandle P. & R. pfd.		$2,564,400	$100	....	7- 2-30	83	54	108	70	76	47½
44⅜	16⅜	6,300	19⅜	18¾	18⅞	Phillips Petroleum	(sh)	2,593,075	N.P.	50cQ	10- 2-30	60¼	36¼	53⅞	35¼	47	24¼
2½	⅝	600	¾	⅝	¾	Pierce Oil Corp.		$29,622,831	$25	....	.....	1⅛	½	5¼	¼	3⅜	1
7⅛	2¼	200	2½	2½	2½	Pierce Petroleum	(sh)	2,500,000	N.P.	10c	11-15-30	5½	2½	7	3½	5⅞	½
54	18½	1,300	19	18¾	18¾	Prairie Oil & Gas		$60,848,000	$25	50cQ*	9-30-30	55½	45⅝	68	46	65⅜	40½
60	24⅜	3,800	30⅛	29⅞	30	Prairie Pipe Line		$101,250,000	$25	75cQ†	9-30-30	190	130⅜	280	172	65	45
11⅞	3	200	3½	3½	3½	Producers & Refiners		$37,438,950	$50	....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	15	70	16	15¼	15¼	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	50	36⅞	49⅝	41	46¾	25½
27¼	10¾	1,600	11⅜	11	11	Pure Oil		$75,959,250	$25	37½cQ	9- 1-30	33½	25	31⅝	19	30¾	20
8¾	5⅞	1,100	6½	6⅜	6⅜	Richfield Oil (new)		$52,410,875	N.P.	....	9- 1-30	28⅝	25⅜	56	23	49⅝	20
25¾	7	700	8	8	8	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	..	..	37½	32	42½	15
56½	37⅝	9,600	41⅜	39¾	41⅛	Royal Dutch, N. Y.	(sh)	611,303	...	$1.875	8-13-30	54½	44¼	64	44⅝	64	43⅛
48⅜	35⅝	30	35⅝	35⅝	35⅝	Shell Transport & Trading Co.		£23,985,000	£1	$1.45	7- 8-30	48⅝	40½	47⅞	41⅜	51½	40⅝
25½	7½	10,400	9	8½	9	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	31¾	23⅝	39¼	23¼	31¾	19
37	7	100	8⅞	8⅞	8⅞	Simms Petroleum		$8,353,620	$10	40cQ	9-15-30	25⅝	14¼	27¼	18⅛	40⅛	15
32	11⅜	7,100	13¼	13	13¼	Sinclair Consolidated	(sh)	5,500,000	N.P.	25cQ	10-15-30	22⅜	15	46¾	17⅜	45	21
112¼	103	100	103	103	103	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-15-30	104½	97	110	102½	111	103
42	10¼	600	14¼	14	14	Skelly Oil		$27,441,250	$25	50cQ	9-15-30	37⅜	24⅛	42⅝	25	40½	28
75	48¾	10,500	49⅞	48¾	49⅜	Standard of California	(sh)	12,594,098	N.P.	62½cQ	9-15-30	60¾	50⅜	80	63	81⅞	51½
49	17⅞	1,200	18½	18¼	18½	Standard of Kansas		$8,000,000	$25	50cQ	9-15-30	20⅞	14⅝	37¾	15	33¾	18
84⅞	49	22,700	53⅜	52½	52¾	Standard Oil of New Jersey		$634,999,200	$25	25cQ*	9-15-30	41⅜	35⅛	59⅜	37¾	83	49
40⅜	24⅞	12,800	25¼	24⅞	25	Standard Oil of New York		$445,223,675	$25	40cQ	9-15-30	34⅛	19¾	33¼	28¾	48⅛	31¾
70	47⅜	300	49	48½	48½	Sun Oil	(sh)	1,416,869	N.P.	25cQ	9-15-30	34⅞	30	77	31½	68⅝	55
9⅜	1⅛	3,100	1⅜	1¼	1¼	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-20	..	..	..	..	24	5¼
60½	35	3,800	38⅜	37½	38⅜	The Texas Corp.		$246,204,900	$25	75cQ	10- 1-30	58	45	74¾	50	71⅞	50
14½	5½	200	6½	6½	6½	Texas Pacific Coal & Oil Co.		$9,304,890	$10	2½%A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9½
31	15⅛	100	15½	15½	15½	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	9-30-30	29⅛	19	41½	19⅝	40	14
94¾	82	100	82	82	82	Tide Water 5% pfd.	(sh)	19,947,000	$100	$1.25Q	11-15-30	90⅛	85	100¼	86	97½	85½
17⅜	8	4,800	8⅝	8	8	Tide Water Associated	(sh)	5,560,424	N.P.	30c8	8-15-30	19⅛	15¾	25	14¾	23½	10
89¾	69¾	1,000	71½	70½	70½	Tide Water Associated pfd.		$73,284,500	...	$1.50Q	10- 1-30	..	..	..	..	90⅞	74⅛
50	25⅛	2,800	25¾	25¼	25½	Union Oil of California		$104,342,375	$25	50cQ	11-10-30	56½	39⅝	58	42⅜	57	42⅛
38½	24	300	25⅛	25	25	Union Tank Car	(sh)	1,254,048	$100	40cQ	9- 2-30	127½	94	128⅛	110	163¾	121⅞
27	6	200	6	6	6	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	34½	24½	44⅞	26	42⅞	15
21	9	200	10	10	10	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. x Ex-dividend.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

UNFAVORABLE MARKET CONTINUES IN THE EAST

(Continued from Page 139)

ucts for Atlantic and Gulf Coast ports during the week (with owner of tanker moving the oil where such owner of record is an oil company) were as follows:

To New York—82,200 bbls. of gasoline on the Cities Service Oklahoma (Cities Service Co.); 72,800 bbls. of gasoline and 7,200 bbls. of V.M.&P. naphtha on the Huguenot; 81,000 bbls. of gasoline on the David McKelvy (Tide Water Associated).

To Philadelphia—114,400 bbls. of gasoline on the Eastern Sun (Sun Oil Co.); and 117,000 bbls. of gasoline on the Sun (Sun Oil Co.).

To Port Arthur, Tex.—186,500 bbls. of gasoline on the Texas (The Texas Company).

Petroleum Exports

There was a substantial improvement in movement of refined petroleum products into export channels through the local port during the week ended November 22, and the pick-up in volume came somewhat as a surprise to many operators who had been looking for continued quiet. While price cutting has been instrumental in stimulating sales in a few instances, there is considerably more interest shown in the situation by foreign operators and it is now believed that many of those buyers who have been operating along hand-to-mouth lines for the past several months have now reached the point where considerable replacement of stocks is made necessary.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Nov. 22	Nov. 15	Nov. 8
Gasoline	240,000	38,000	200,000
Naphtha	575,000	350,000	420,000
Kerosene	147,000	57,000	460,000
Fuel oil	97,000	8,000	125,000
Lubricating oil	2,747,000	2,640,000	1,110,000
Petroleum, ref.	1,780,000	775,000	395,000
	Pounds		
Petrolatum			
Paraffin wax	3,090,000	1,680,000	2,220,000
Refined	635,000	675,000	
Scale	425,000	130,000	760,000
Lubricating grease	1,245,000	1,160,000	850,000

Included in the exports during the week ended November 22 was a total of 1,172,000 gallons of pale oil which cleared on the "Winnebago" for Manchester. The "Winnebago" is an Anglo-American Oil Co. tanker.

There is a fair inquiry in the export market this week for refined products for prompt shipment, and a moderately active movement is looked for during the closing month of the year.

FURNACE AND GAS OILS ARE IN GOOD DEMAND

(Continued from Page 138)

light. Industrial lubs are very quiet. It is that lack of business which is making the competition so very keen and is inducing refiners to name prices which are exceedingly low for immediate orders with the intention of advancing their price just as soon as they have secured a reasonable amount of business to serve as a backlog as they say in the steel industry.

The only general change in prices made last week was that of the Standard Oil Co. (Indiana), reducing the naphtha prices both tank wagon and tank car. The new tank wagon prices for Chicago are, Oleum spirits, 12 cents; V. M. & P. naphthas, 14 cents and cleaners' and Stanolind naphtha 16.2 cents. The tank car prices were reduced at the same time. Oleum spirits to 8 cents; V. M. & P. naphtha to 9.5 cents and cleaners' and Stanolind naphthas to 11 cents. This is a most decisive cut and was made over the territory although the reduction was varied at different points. Furnace oil prices were unchanged although there were reports that there had been some change in these prices. The present quotations are considered as unreasonably low by some other distributors. There is no change in the general tank wagon scale in this territory and it is not thought that there will be any immediate change, in fact most are waiting for a crude change to come before the tank wagon scale is altered.

STANDARDIZED CONTRACT READY FOR GENERAL USE

(Continued from Page 141)

the Buyer, or should such operations tend to endanger the plant or property of Buyer or the lives of the Buyer's employees should such diluted or contaminated gas be taken, then Buyer, at its election, may discontinue taking the casinghead gas from the particular well or wells while being so operated.

7. RIGHT OF WAY—In so far as Seller's lease permits, Buyer is granted the right to lay and maintain lines and to install any necessary equipment on said lease and shall have the right to free entry for any purpose incidental to gasoline plant operations so long as such purpose does not interfere with lease operations or the rights of owners in fee. All lines and other equipment placed by Buyer on said lands shall remain the property of the Buyer and, subject to the terms of this contract, may be removed by Buyer at any time.

8. SETTLEMENT TESTS—The gasoline content shall be determined by a field compression test made in accordance with the official code of the National Gasoline Association of America for testing natural gas for gasoline content. The specific gravity shall be determined in accordance with the specifications and test procedure of said association for the determination of specific gravity of natural gases by the balance method. The tests for gasoline content, air content and specific gravity of the gas shall be made by the Buyer quarterly except when, in the opinion of either party, a change in the method of operations of the lease will affect materially the gasoline content and specific gravity of the gas, in which event the tests shall be made at the demand of either party upon five (5) days' notice to the other party. The Buyer shall notify the Seller in writing ten (10) days previous to the quarterly tests in order that it may have a representative present to witness said tests and/or make joint tests with its own appliances. The content tests shall be computed on the basis of four (4) ounces above an assumed atmospheric pressure of.....pounds per square inch absolute and at a base temperature of sixty (60) degrees Fahrenheit.

9. —METERS—The casinghead gas delivered hereunder shall be measured by a suitable orifice meter, or meters, of standard make to be furnished, installed and kept in repair by Buyer on the lease herein covered. The amount of gas so metered shall be computed on the basis of four (4) ounces above an assumed atmospheric pressure of.....pounds per square inch absolute at a base temperature of sixty (60) degrees Fahrenheit and at an assumed flowing temperature of.....degrees Fahrenheit. The Buyer shall test, and if necessary adjust and repair, said meter, or meters, at or about the time the tests for gasoline are made. Said meter, or meters, shall be open to inspection at all times by Seller in the presence of Buyer. In case any question arises as to the accuracy of the meter measurement said meter, or meters, shall be tested upon the demand of either party. The expense of such tests shall be borne by the party demanding same if the meter is found to be correct and by the Buyer if found incorrect. A registration within 3% of correct shall be considered correct. Settlement for any period of inoperation or inaccurate measurement shall be in accordance with the average readings taken during the last preceding ten days when the meter was registering accurately and the first ten days after the meter was restored to accuracy. If requested Buyer shall send the charts to Seller for checking after which they are to be returned to Buyer.

10. PRICE—The Buyer shall pay to Seller for the casinghead gas delivered hereunder a price per thousand cubic feet equal to twenty (20%) per cent of the gross value of the gasoline contained in said gas when the gasoline content is less than .75 of a gallon per thousand cubic feet, twenty-five (25%) per cent when the content is .75 of a gallon but less than 1.75 gallons per thousand cubic feet and thirty-three and one-third (33⅓%) per cent when the content is 1.75 gallons, or more, per thousand cubic feet. The gross value of the gasoline contained in a thousand cubic feet of gas shall be determined by multiplying the gasoline content (determined as hereinabove provided) by.....

11. PAYMENT—Payment shall be made by the Buyer not later than the 20th day of each month for all casinghead gas purchased hereunder during the preceding month, and at the time payment is made a statement showing full details of the accounts shall be transmitted to the Seller accompanying the Buyer's check in payment therefor. Examination by the Seller of the books of account kept by the Buyer respecting said gas account shall be permitted by the Buyer at any and all reasonable hours.

12. TITLE—The Seller warrants its title to said gas and that it has good right to sell said gas to Buyer but the Buyer shall not be required to make payments until the Seller shall have submitted abstracts of title covering said leasehold showing good and merchantable title in it and that it has good right to sell said casinghead gas, all to the satisfaction of the attorneys of the Buyer; provided, however, if the title of Seller is questioned, or involved in any action, the Buyer shall have the right to withhold payment during the pendency of such action or until said title is freed from such question, or until Seller furnishes bond conditioned to save Buyer harmless with surety acceptable to the Buyer.

13. ROYALTY—The Seller agrees to account and pay to the lessors or royalty owners in the lease above described, in strict accordance with the provisions thereof, the royalty on the casinghead gas sold and delivered hereuner to Buyer.

14. VACUUM—Upon request of Seller the Buyer shall apply and maintain on Seller's wells a vacuum substantially equal to that maintained on offset wells by gasoline plants. Up to such maximum Seller shall have control of said vacuum at all times.

15. DRIP—The Buyer shall keep reasonably clear of obstruction all its pipe lines through which said gas is being delivered and shall own all liquid collected in such lines.

16. CASUALTY—Any failure of either party hereto to perform any of the obligations hereunder shall be excused if such failure is due to fires, strikes, floods, lack of water, winds, lightning, accidents or any circumstances beyond the control of the party failing to perform.

17. UNPROFITABLE GAS—In the event the casinghead gas from any well or wells on said lease becomes insufficient in volume or gasoline content, or for any cause becomes unprofitable for the extraction of gasoline therefrom, the Buyer shall have the right to cease taking the gas so long as such condition exists. It is further provided that if at any time the volume and/or gasoline content of the gas available to Buyer, or if any cause beyond its control, shall render the construction and/or operation of said plant unprofitable, Buyer may, by thirty days' written notice and payment, or tender, to Seller of Ten ($10.00) Dollars, cancel this contract.

18. PRIORITY RIGHTS OF SELLER—As said premises are being operated primarily for the production of oil, the taking of casinghead gas by the Buyer shall be subservent to said oil operations. The Seller may, at any time, without liability to Buyer clean out, deepen or abandon any well or wells on the above described properties, or may use any efficient, modern or improved method for the production of oil. Before any well or wells are taken out of service for any reason whatsoever Seller agrees to first shut off the same from communication with the gathering mains.

19. INDEMNITY—The Buyer shall indemnify and hold the Seller harmless against any claim for damages growing out of the operations conducted hereunder by the Buyer. Likewise the Seller shall indemnify and hold the Buyer harmless against any claims for damages growing out of Seller's operations of the lease herein described.

20. SCOPE—In the event the property above described covers more than one lease, this contract shall be construed as a separate contract on each lease.

21. REGULATORY BODIES—This contract shall be subject to all the rules and regulations of any duly constituted federal or state regulatory body having jurisdiction herein.

22. ARBITRATION—In the event of any dispute or controversy between the parties hereto involving the operations under this contract same shall be settled by arbitration. Each of the parties shall appoint an arbitrator and the two appointed shall select a third. The award of any two arbitrators shall be conclusive upon the parties and shall be made within thirty days after the appointment of the first arbitrator.

23. TERM—Either party shall have the right to terminate this contract at the expiration of.....years from the date thereof or on any anniversary of said date thereafter by giving the other party thirty (30) days' notice, in writing, of its intention so to do, after which each party shall be released from all further liability hereunder; provided that, in the event the oil and gas lease covering said premises should terminate before the expiration of the term of this contract then this contract shall be cancelled contemporaneously with such termination.

24. ASSIGNMENT—This contract shall extend to and be binding upon the parties hereto, their heirs, administrators, successors and assigns, but no transfer of, or succession to the interest of the Seller hereunder, wholly or partially, shall affect or bind the Buyer until it shall have been furnished at the office of the Buyer in the city of ....., ..., with the original instrument or with proper proof that the claimant is legally entitled to such interest.

IN WITNESS WHEREOF the parties have hereunto subscribed their names.

....
Seller.
....
Buyer.

CUT LOOMS IN THE CALIFORNIA MARKET

(Continued from Page 31)

"It is suggested in the briefs that the legislature is without authority to restrict the production of oil and, lest we be misunderstood, we deem it expedient to add that the record does not indicate that the temporary injunction was founded upon such a theory. Nor are we determining that the act attempts to confer upon the court any such power. Rather are we convinced that the proper construction of the enactment confers the authority within the limits of enjoining the production of gas when in excess of the reasonable proportion to the oil for the particular field involved when not conveniently necessary for other than lifting purposes."

The Appellate Court dissolved the temporary restraining order which prohibited the Superior Court from enforcing the gas law and while this validates the contested orders of the latter it is a mere gesture because the period of maximum gas waste at Santa Fe Springs has long since passed. The ruling made by the District Court of Appeal is the result of an action whereby the Wilshire Oil Co. and its subsidiaries secured a temporary restraining order enjoining the Superior Court from carrying out its conservation orders pending determination of the constitutionality of the conservation law. A somewhat similar action is pending in the State Supreme Court, this appeal having been taken by the Twin Bell Syndicate, Star Petroleum, and the second Twin Bell Syndicate, following the decision of the Superior Court that the act was valid. It is customary for the Supreme Court to render decisions on appeals within 90 days after submission but the court used its prerogative recently by calling for a resubmission of briefs with the result that it will not be obliged to render its decision until February 1.

The principal arguments presented to the Appellate Court contended, first, that the state conservation act deprives operators of their property without just compensation and without due process of law; secondly, that the statute is void because of its uncertainty and the failure of the legislature to define a standard of conduct, and thirdly, that the enactment permits the use of gas for lifting purposes in a reasonable proportion to the amount of oil produced and that the uncontroverted evidence shows no other or greater use and for that reason the Superior Court was without jurisdiction to grant the temporary injunction. The Appellate Court held:

Appellate Court's Ruling

"We think that the better reasoning on account of the self-propelling or migratory character of natural gas, as well as oil, dictates the conclusion that while in general we may speak of the owner of the surface as being the owner of gas and oil in place, what we really mean is that he alone has the right through his own property to endeavor to reduce the substances to possession; that when they are reduced to possession and then only does he have an absolute and unqualified title thereto. We are convinced that a proper construction of the enactment confines the authority within the limits of enjoining the production of gas when in excess of the reasonable proportion to the oil for the particular field involved when not conveniently necessary for other lifting purposes. We are irresistibly led to the conclusion that the statute here involved is not as stringent in its restrictions as those in other jurisdictions and further that it does not deprive the petitioners of property without just compensation or due process of law, but rather falls within the legislative authority of the state with the wisdom of which we cannot be concerned."

The decision of the Appellate Court is considered contradictory in several of its deductions. In one place, for instance, it holds that gas can be wasted if operators do not exceed the maximum gas-oil ratio, as this constitutes reasonable waste. At another point the decision states that there is no unreasonable waste irrespective of the gas-oil ratio if the operation has a use for the excess gas produced. It is the prevailing opinion that the Appellate Court's decision does not facilitate enforcement of the gas conservation law and that it will not be allowed to stand because of the court's opinion with reference to unreasonable waste. This would permit operators having gas sales contracts with gas companies to produce up to the requirements of the gas companies while other operators less fortunate in their contracts with public utilities would be obliged to restrict production to the minimum.

Wilbur Defends Conservation Policy

Annual Report Deals With Kettleman Hills Situation, Oil Shale and Oil Board Policy. Court Upholds President

By C. E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Dec. 1.—"Each year during the last three years in the seven oil producing public land states more oil wells have been shut in because of lack of market than have been brought into production," states Dr. Ray Lyman Wilbur, Secretary of the Interior and chairman of the Federal Oil Conservation Board in his annual report to Congress. Doctor Wilbur refers to authority granted by Congress to control the oil and gas situation which authority will expire January 31, 1931.

"The department last year asked and received from Congress two major pieces of legislation, which will be important aids to this year's conservation efforts," he says. "Authority was granted for government participation in unit operation and development of single oil pools involving public lands, permitting development of these common pools by the minimum number of wells, with a minimum waste of gas and oil and eliminating offsetting with its accompanying overproduction, and authorizing extensions of leases for the life of the agreement."

Kettleman Hills Plan

The Secretary refers to negotiations now under way for a unit agreement in Kettleman Hills, Calif.

"This production of high grade oil, if allowed to flow under the ordinary old-fashioned wasteful conditions from a score of ready and waiting wells, would flood the oil market with gasoline exceeding in quantity the entire California production. The gas wasted from that field each day exceeds 450,000,000 feet, although only 6 out of about 30 wells are being allowed to produce. Each year the waste of energy from Kettleman Hills is over twice the total expected annual electrical output of Hoover Dam. Californians who for years have urged the development of the Colorado River as a great new source of energy probably do not realize that failure to enforce strict conservation measures is costing them annually twice as much irreplaceable energy as Hoover Dam will be able to make good.

"The second important piece of legislation authorized the extension of prospecting permits, in the Secretary's discretion and on conditions which he may impose. This has made possible the insertion in most of the extensions of prospecting permits a requirement that no drilling or production shall be effected until permitted or required by the Secretary.

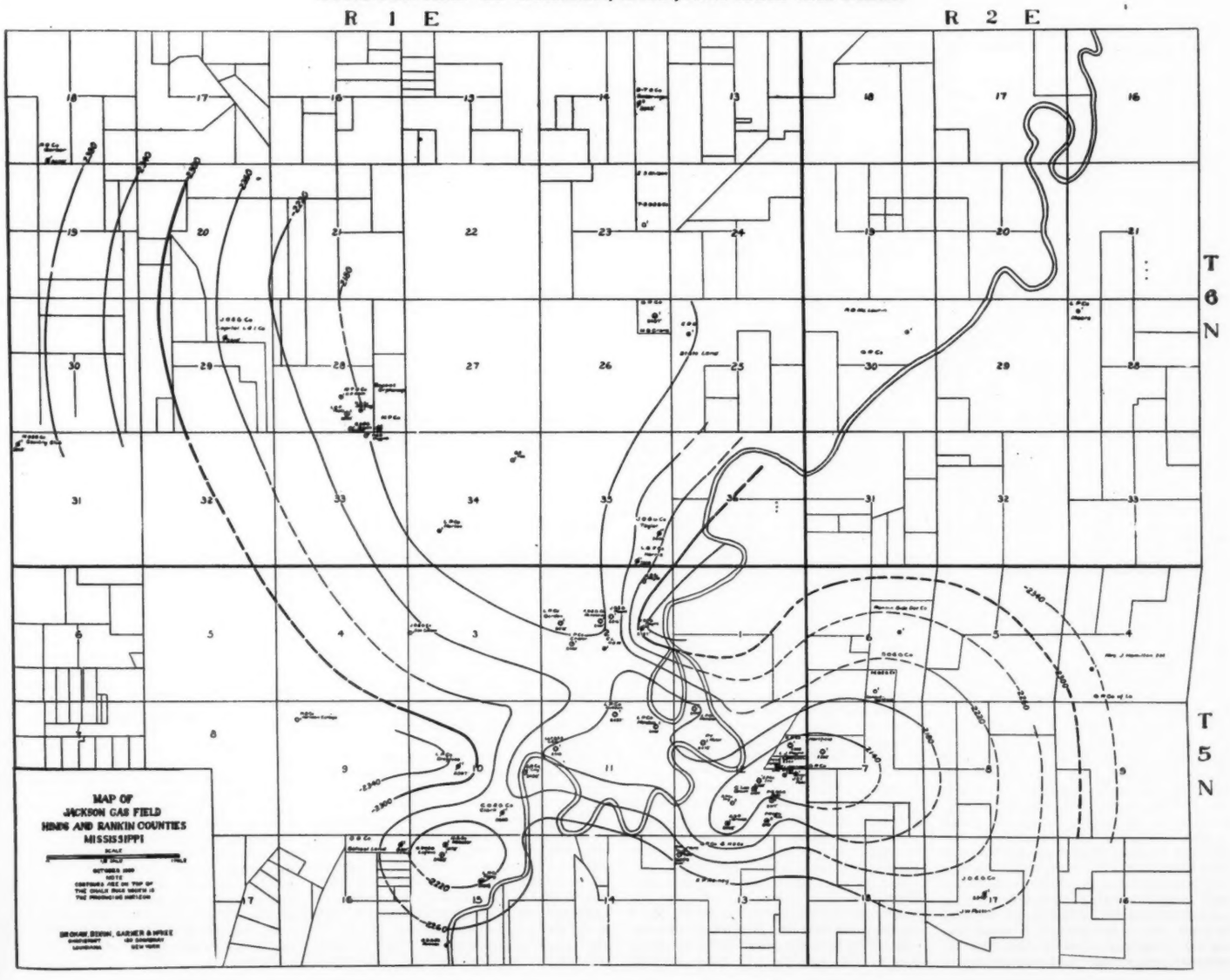
"When the President's oil conservation policy was put into effect on March 12, 1929, there were approximately 17,500 outstanding prospecting permits. On July 1, 1930, the number outstanding had been reduced to 5,094. Yet, during that time permits had been granted and permits extended wherever equities demanded it, and in no case had any permit been canceled where there had been compliance with the requirement of the law. Nevertheless, over 12,000 permits were found delinquent and canceled. The conservation policy has resulted in blowing a great deal of speculative paper off the public domain.

Effect of Policy

"But there has been no real injury to the oil industry thereby in any of the seven oil producing public land states. Each year during the last three years more wells have been shut in because of lack of market than have been brought into production. On July 1, 1930, there were shut in, in these seven states, 6,190 wells, including 599 on the public domain; whereas new wells brought into production during all of 1929 and the first six months of 1930 numbered only 1,898, including 282 on public land.

"In other words, over three times as many wells were shut in on July 1 as had been brought into production during the preceding 18 months. If wells were being shut in more rapidly than new wells were being produced it is not apparent that further prospecting would result in anything but an economic waste of

CONTOUR MAP OF JACKSON, MISS., NATURAL GAS FIELD



any oil which might be produced. And in every state except Idaho the number of shut-in wells on July 1, 1930, was greater than the number shut in on the day when the conservation policy became effective.

"It would be unfair, however, to make the inference from these figures too sweeping in view of the very large factor played by the single State of California, which is responsible for 5,431 of the shut-in wells and 1,562 of the new ones. But even if California is eliminated from the list the number of wells shut in exceeds the new wells brought into production during the period mentioned."

Doctor Wilbur refers to the oil shale land and says: "During the past year, commencing last spring, every mining engineer in the General Land Office, save three, was called off other work and under my personal orders assisted in identifying, examining, and physically posting more than 6,400 oil-shale claims with notice of default to the United States for failure of the claimant to perform assessment work. This followed the Supreme Court decision of Wilbur v. Krushnic, which, although it reversed the department and sustained the claimants on the issue of assessment work, and so swept aside the bulk of our defensive procedure, left the possibility (though no certainty) that if the remaining claims were posted before resumption of work on the claim, a different result would follow.

"This posting work will continue during the current year, and the tremendous task of adjudicating these claims will get under way. A second test case in the courts may be expected. No leases have been issued under this administration. But oil-shale claims valid in 1920 can be taken to patent under the mining law, without any discretionary power in this department to decline to issue the patent. Accordingly about 42,000 acres have been patented."

Oil Board Continues Efforts

The Oil Board is continuing its efforts in the interest of practical conservation measures, Chairman Wilbur states.

"Government agencies and industrial leaders, co-operating with this board, are effectively dealing with production problems in the major oil-producing States. In California, Oklahoma and Texas efforts were made during the past year to confine crude production to actual needs, while a part of the refining branch of the industry, at the suggestion of this board, operated on a six-day instead of a seven-day basis so that output might more equitably meet requirements.

"A volunteer committee on petroleum economics, consisting of state officials and industry leaders, made two special reports to this board dealing with supply and demand factors, possible allocation of crude requirements, and imports and exports of crude. The basic efforts of the Federal Oil Conservation Board are to prevent waste in the producing and handling of our natural petroleum deposits. As chairman of the board, the Secretary of the Interior is effecting practical conservation measures in connection with the development and maintenance of the public domain and Indian lands."

Conservation Policy Upheld

The oil conservation policy of President Hoover announced by Secretary Wilbur, March, 1929, has been upheld in a majority opinion of the Court of Appeals of the District of Columbia. It was under this policy that Secretary Wilbur rejected 5,000 pending applications for permits to prospect for oil on government lands.

Mr. Wilbur's action was held to be a valid exercise of executive power in the public interest, to be interfered with by the court only in a "clear" case. The majority opinion is based on decisions of the United States Supreme Court, including the Midwest Oil case, in which it was held that the executive is empowered to make temporary withdrawals of public lands without formal proclamation. Congress has the right to disaffirm such action, it was pointed out.

In reversing the judgment of the lower court, which had granted a mandamus against Secretary Wilbur, the majority opinion points out that mandamus is not awarded as a matter of right, but in the exercise of a sound judicial discretion, to remedy and not to promote a wrong, to compel the performance of an actual duty rather than to direct the performance of an act which will work public or private mischief.

"The President was in a position," says the majority opinion, "to know when the public interest required particular portions of the people's lands to be withdrawn from entry or location: his action inflicted no wrong upon any private citizen and, being subject to disaffirmance by Congress, could occasion no harm to the interest of the public at large. In the present case, his orders, issued through Secretary Wilbur, were intended to meet an emergency occasioned by the great overproduction of oil and gas, the waste incident thereto and other public considerations. It would take a very clear case to justify a court in arresting and suspending the action of the executive taken in the public interest. The record does not present such a case."

A lengthy dissenting opinion was rendered by Justice Josiah A. Van Orsdel holding that a mere statement by the President at a press interview that "there will be a complete conservation of governmental oil in this administration" is "merely the statement of a future policy which may or may not be adopted and would have to be put into effect by a formal proclamation by the President before it could justify in the remotest degree the action taken by Wilbur."

Justice Van Orsdel claims that Secretary Wilbur acted outside the scope of his power in the suspension of the oil-leasing act, since he was "totally without power to act until certain statutory conditions had been complied with—namely, the issuance of a proclamation by the President."

The District of Columbia Supreme Court held the Secretary had exceeded his authority by the order of suspension, and directed writs of mandamus requiring the reinstatement of the applicants for permits. The United States Supreme Court will probably be called on to review the decision of the District Court of Appeals.

RAILROADS FRAMING NEW PIPE LINE LAW

(Continued from Page 36)

the railways would desire to enter the pipe line business, since this, it is said, is rather hazardous unless the sources of supplies also are obtained or more or less controlled.

Third Party Impractical

Neither crude oil nor natural gas supplies are inexhaustible, it is pointed out, and moves are always occuring in the oil industry that could result in a radical change in refinery locations. In this event a complete change in pipe line facilities might have to be made if owned by a third party, while if the pipe lines were owned by the large integrated oil companies, which closely watch changes in the industry, traffic through the pipe lines could probably be regulated with a minimum of changes.

In the rapid shifts in industrial conditions in the last century it has always been futile for one transportation system to protest against the establishment of a cheaper system, many historians and observers contend. The oil industry, it is stated, faced this same problem in its early days, when teamsters fought bitterly against the establishment of crude oil pipe lines in the old Pennsylvania fields. Regardless of any protest or any temporary regulation, it is asserted, a commodity sooner or later will be handled in the most efficient and economical manner. Serious objections to the extension of railroads in their early days were voiced by many whose businesses they were hurting or destroying, old data show.

Although the railroads are losing a considerable revenue through the expansion of natural gas trunk lines, the chief loss to the carriers will come through large expansion in the movement of gasoline through pipe lines, it is said. It will also seriously curtail the use of railroad tank cars, it is stated, of which almost 275,000 are in operation today, a substantial part being owned by the companies that lease them to oil concerns. Transportation of gasoline, however, through pipe lines will not affect existing crude oil pipe lines or locations of refineries.

Rail Interest in Oil

The transporting of crude oil through pipe lines increased simultaneously with the growth of the oil industry, with the result that comparatively little crude oil was ever moved by rail except from a new field while pipe lines were built. The railroads never make a serious effort to obtain this class of business, being satisfied with the movement of the finished products.

Consequently, so long as the railroads were moving the finished oil products, no serious objections were heard from them. In fact the more crude oil that was being moved to refineries the greater was the movement of finished products by rail. In the new movement of gasoline pipe lines the railroads feel they are losing considerable business that cannot be easily replaced.

Under the most favorable conditions, the cost of moving gasoline through pipe lines is put at about 50 per cent cheaper than hauling by rail, after allowing for a fair return on the investment and setting aside a sum sufficient to cover depreciation. If a line can be operated at capacity, the movement of crude oil through pipe lines is said to be the cheapest of all ways. Since a greater quantity of gasoline can be moved through the same size pipe line than crude oil the movement of a given quantity of gasoline would be cheaper than a similar amount of crude oil.

CHICAGO POST OFFICE OPENS GASOLINE BIDS

(Continued from Page 142)

Petroleum Co. bid 5¾ cents for the first two months and 6 cents for the third month or the average of the tank car market with a maximum of 6½ cents. The Service Oil Co. made a bid of the low of the tank car market quotation with a maximum of 4¾ cents. The prices include a charge of one-half cent a gallon as handling costs.

The tank wagon delivery bids were made by the Deep Rock Oil Corp. whose bid was 8 cents flat over the period, the Shell Petroleum Corp., whose bid was flat 13 cents over the term and the Spartan Petroleum Corp., who bid 8½ cents flat over the three months. The bids will be sent to Washington where the award will be made. The Standard Oil Co. (Indiana) and the Sinclair Refining Co. did not make any bids. In awarding the contract the question of hauling to the post office garage will be considered.

OMAHA AGAIN REJECTS NATURAL GAS FRANCHISE

OMAHA, Neb., Nov. 29.—Natural gas for Omaha to be brought from the Texas gas fields by the Western Natural Gas Co. was defeated in a popular election this week by nearly 7 to 1, the vote being 35,513 against 5,106. The Western Natural Gas Co. was backed by Tulsa interests.

Some months ago the city accepted bids from the Western company, its terms to be accepted or rejected at a city wide election. An intensive campaign with every device known to skilled campaigners was put on by the company in favor of the proposition. Opposed to natural gas were the combined coal dealers, oil dealers, railroads and other natural gas companies. The argument advanced was against the company rather than against natural gas. That argument was that the Western Natural Gas Co. owned no property itself, was more of a brokerage or promotion company which would sell the Omaha franchise if granted, to some other concern. This argument is thought to have done more towards defeating the measure than any other one cause.

Another cause was that the ordinary consumers were convinced the rates offered would not lower their gas costs but that all reductions would be made to big industrial concerns like packing houses, smelters and manufacturers.

The local gas company, which is a municipally owned concerned, announces another probable cut in rates, the eighth since the city took over the company. It will probably be the plan of the municipal gas plant to purchase natural gas to be mixed with the manufactured article. This can be bought from either of two companies now building pipe lines from Texas through Iowa, both of which cross the Missouri River within 15 miles of Omaha or from two other concerns whose pipe lines will pass through this city.

GASOLINE CONSUMPTION SHOWS SMALL INCREASE

(Continued from Page 142)

lons for the corresponding period of 1929, an increase of 522,399,000 gallons, or 6.7 per cent.

The figures giving the quantity of gasoline sold or offered for sale, as reported under various laws, follow. In some cases they are gross figures before deductions allowed for small quantities of gasoline reshipped or sold for other than taxable use, the tax upon which, if paid, is subsequently refunded. All figures are subject to revision.

GASOLINE CONSUMPTION BY STATES, SEPTEMBER, 1930

	Sept., 1930 (gallons)	Sept., 1929 (gallons)
Alabama	14,675,000	15,765,000
Arizona	6,276,000	6,113,000
Arkansas	12,765,000	13,538,000
Colorado	16,693,000	14,218,000
Connecticut	20,508,000	19,310,000
Delaware	3,361,000	3,049,000
Dist. of Columbia	6,946,000	6,322,000
Florida	16,348,000	15,552,000
Georgia	19,799,000	15,438,000
Idaho	6,790,000	6,139,000
Illinois	89,282,000	84,768,000
Indiana	42,647,000	40,545,000
Iowa	37,572,000	33,354,000
Kansas	36,039,000	34,204,000
Kentucky	15,624,000	14,990,000
Louisiana	15,919,000	16,225,000
Maine	12,623,000	11,445,000
Maryland	16,635,000	15,469,000
Massachusetts	50,390,000	47,767,000
Michigan	73,776,000	75,252,000
Minnesota	41,227,000	35,381,000
Mississippi	*11,740,000	12,517,000
Missouri	40,516,000	37,833,000
Montana	10,486,000	11,272,000
Nebraska	21,222,000	18,142,000
Nevada	1,889,000	1,878,000
New Hampshire	6,998,000	6,752,000
New Jersey	50,050,000	44,111,000
New Mexico	5,154,000	4,281,000
New York	142,343,000	128,398,000
North Carolina	22,806,000	24,091,000
North Dakota	14,290,000	14,150,000
Ohio	81,084,000	94,845,000
Oklahoma	30,149,000	28,408,000
Oregon	16,779,000	15,983,000
Rhode Island	8,266,000	7,326,000
South Carolina	10,724,000	10,347,000
South Dakota	14,393,000	11,621,000
Tennessee	20,090,000	19,179,000
Texas	72,767,000	67,321,000
Utah	5,464,000	5,440,000
Vermont	5,334,000	4,962,000
Virginia	20,738,000	19,568,000
Washington	25,759,000	24,036,000
West Virginia	14,561,000	12,901,000
Wisconsin	42,898,000	40,875,000
Wyoming	3,690,000	3,377,000
Total	1,256,025,000	1,193,858,000
Daily average	41,868,000	39,795,000
Increase over previous year:		
Amount of increase	62,167,000	
Percentage increase in daily average	5.2%	

	Quarter ending— Sept., 1930 (gallons)	Sept., 1929 (gallons)
California	357,199,000	334,457,000
Pennsylvania	251,874,000	280,021,000

T. J. BERRIDGE DEAD

T. J. Berridge of Bradford, Pa., who was in the oil business 59 years, died at his home on November 26, at the age of 80 years. Mr. Berridge had been an oil producer in the Bradford Field for the past 10 years. In 1869 he went to the oil region around Oil City and for years worked for Heckel & Davis. Later he worked as foreman for Wesley Chambers in the Bradford Field. From 1900 to 1903 he was with John J. Carter, founder of the Carter Oil Co., and then went with the South Penn Oil Co. resigning in 1920 to take charge of his own oil interests.

Improvements in Pipe Line Welding

New Products, New Processes, New Construction Methods and Greater Manufacturing and Laying Capacity

By William T. Graham
Superintendent of Field Construction, A. O. Smith Corp.

Within the past three or four years, the distribution of natural gas and the transportation of crude oil, as well as gasoline, through large diameter pipe has increased tremendously. Hundreds of miles of pipe line have been necessary, since, in most cases, the distribution points are far removed from the sources of supply. To transport these fuels over such long distances economically, new products, new construction methods, and a much greater capacity for the manufacturing and laying of large diameter pipe were required.

To lower the tremendous cost of material and construction for these long lines, and to make their installation more permanent, with no losses due to failures or leaks during operation, many new products and methods have been engineered into the picture.

One of the first steps in meeting the demand for more pipe and larger pipe was the application of the automatic welding process to pipe making. The A. O. Smith Corp. of Milwaukee was the first organization to apply this process in a big way. This company had for some time been supplying couplings, return bends, many types of high pressure vessels and other equipment to the oil industry. These products were produced by a highly specialized electric welding process which had proved unusually satisfactory. It was a logical step to apply this welding process to the manufacture of pipe.

The first result of the application of this process to the making of pipe was a startling increase in production. At that time, the total production of the country for pipe in diameters over 20 inches was less than 3 miles per day. In less than three years, the capacity of the A. O. Smith pipe mills alone has been built up to 32 miles per day, in diameters from 8 to 26 inches.

Stronger Steels

The new method of pipe fabrication made possible the use of stronger steels which cut down unnecessary wall thickness, reducing the weight of pipe required for given pressures, to say nothing of making possible tremendous shipping and hauling economies.

Another innovation was the making of pipe in longer lengths. At the time the A. O. Smith Corp. entered the field, the customary lengths were 18 and 20 feet. Improved manufacturing methods made it possible to produce uniform lengths of 30 to 40 feet, cutting down the handling and joining time in the field, since every length laid and joined results in exactly 30 or 40 feet of line. In spite of the added length, the weight of the pipe is not greater than that of the shorter lengths made by the old methods, since in most cases the thinner walls made possible by the new welding method compensates for the weight of the added length per pipe.

The making of line pipe today is a high production process. Plates of proper dimensions are furnished the mill, and are there pickled free from scale, rust and all foreign matter, leaving the entire surface clean and in perfect condition for surface inspection. Since no reheating of the plate is necessary during fabrication, the finished pipe is as free from scale and pits both inside and outside as the plate was after pickling.

The first operation after pickling is to size the plate. The operation also prepares the longitudinal edges of the plate for welding and insures an exactly uniform width. This results in absolute uniformity throughout the entire length of the circumference and therefore the diameter of the pipe when formed for welding.

When the forming operations have been completed, the prepared edges of the plate come together tightly, leaving no chance for variation in diameter due to irregular width of welding preparation.

The welding of the abutting edges follows. The electric welding process is used. As this is a machine application, a consistently uniform product is assured. Comparatively little is dependent on the skill or judgment of operators whose ability to produce perfect results might vary from day to day. After welding, come cleaning and inspection operations which are followed by the final sizing. This is done cold, and results in a duplication of size, roundness and straightness that can be obtained in no other way.

The ends are next prepared for field joining in either the ordinary manner for welding or coupling, or with one of the special types of end developed by the A. O. Smith Corp.—the double bell and stabbing ring or the bell and spigot. This method of preparing ends for field welding has resulted in the speeding up of both line-up and stab, and the welding itself. The uniform size and roundness of the ends permits fast, accurate progress, and the introduction of the stabbing or chill ring has made possible better welds in less time than can be obtained with any of the old methods.

A hydraulic pressure test of every length follows, with the pipe under pressure subjected to repeated blows from a series of hammers; the pressure varying with the diameter and wall thickness of the pipe.

Before applying the shop coat of primer, the pipe is washed first in a caustic bath and then in a hot water bath which not only heats the pipe to the proper temperature for primer but insures the rapid evaporation of any moisture which might be left on the pipe by the drier. The pipe is then fed through an automatic painting machine which sprays on a coating sufficient to protect the pipe in transit and until it is ready for the field coat. Since the surface of the pipe is clean and absolutely free from any scale, rust or foreign matter, it permits the paint to bond with the steel, securing an excellent foundation for the field coat. With this protection, the cleaning of the line for painting in the field amounts to no more than removing whatever dust it has collected while on the ground.

New Method of Loading

After painting, the pipe is automatically conveyed to the loading dock, where again the uniform long lengths and lighter walls have made possible an altogether new method of loading. With the new method of loading, blocking and tying, out of 7,000 miles of pipe shipped, not a single length has been lost or damaged as a result of ordinary handling.

As greater and greater gas carrying capacities were required, necessitating larger diameter pipe lines running through parts of the country where all manner of weather conditions and temperatures obtained, the constructors of welded lines became fearful of not obtaining enough slack in the lines through the customary methods of crowding the ditch.

In the smaller diameters it was possible, by digging a wide ditch, to snake the line from side to side, thereby obtaining sufficient slack to compensate for shortening through temperature reversals. This method at best was entirely dependent on some "tie in" foreman's judgment—and the number of failures due to tight lines attests to the number of times he has been wrong. Some other method of introducing slack in large diameter welded lines had been sought by the field for some time.

In response to this demand, an expansion joint was developed by the engineers of the A. O. Smith Corporation. This joint permits the introduction of a certain definite predetermined amount of slack at those points in the line where slack is required. This eliminates the chance for line failures due to faulty judgment on the part of the pipe liner, and offers an insurance against shutdowns due to tight line. The accordion-like construction of this expansion joint makes it very flexible and easily bent cold in any diameter, making it therefore also a very desirable bending medium.

Factory Bend

As pipe diameters increased, the cost and difficulty of field bends became greater. To meet this condition, a factory bend was developed which could be furnished for any size and any degree of angularity. These factory bends are an advantage even in the small diameters, since bending the pipe in the field, either hot or cold, with the tools available cannot help but leave strains in the pipe. This is especially true in fire bends, since an uneven heat will cause small areas of the surface to take all the stretch which should have occurred over the entire bend. This condition results in thin spots and consequently a weakened line.

It was logical that welding methods which had proved so successful in manufacturing should eventually be asked for and extended to field construction work. It was at the request of Mr. Lege, president of Magnolia Gas Co., that this method of welding made its first appearance on pipe line construction.

The Magnolia Gas Co. was about to construct 165 miles of 16-inch, 18-inch, 20-inch all-welded pipe line in northern Louisiana. Having been among the first to construct all-welded gas lines, Mr. Lege and his organization had experienced the need for products and methods which at that time were not available. They had welded lines up to 16 inches in diameter, and their experience made them reluctant to attempt still larger diameters. Convinced, however, that all-welded construction was most desirable, they decided to make another attempt to secure from the manufacturer the product and help they required. As a result, the engineers of the A. O. Smith Corp. were asked to develop a type of joint which would simplify the line-up and insure a proper preparation for the weld, and also to furnish, if possible, some mechanical means of taking up expansion and contraction in the line due to movements brought about through temperature reversals, shifting and settling. Their answer in the shape of a belled end and stabbing or chill ring with welding dam to facilitate line-up, and the expansion joint to compensate for movements in the line, was approved. Work on the pipe was started.

After witnessing the method of welding

CRUDE AND REFINED OIL STOCKS WERE REDUCED DURING OCTOBER

WASHINGTON, D. C., Dec. 2.—The production of crude petroleum in the United States during October amounted to 72,696,000 bbls., a daily average of 2,345,000 bbls., according to reports received by the Bureau of Mines. This represents a decline in daily average from the previous month of 21,000 bbls., and marks the fifth successive month in which production has shown a decrease.

The daily average output of the three leading states, Texas, California and Oklahoma all showed small decreases in October. The decline in California was the most marked and was due principally to a drop in production in the Santa Fe Springs Field. Practically all of the other producing districts reported a decline in output in October, one exception being the Appalachian district where production increased for the first time since July.

The number of oil wells brought in showed a material gain over September but the majority of them were shut in as soon as completed.

Total crude stocks east of California on October 31 amounted to 376,462,000 bbls., as compared with 376,439,000 bbls. (revised figure) on hand at the beginning of the month. Stocks of heavy crude and fuel oil in California declined approximately 1,000,000 bbls., the largest monthly decrease since April but stocks of refinable crude in that State showed a small increase.

Stocks of refined oils declined nearly 2,000,000 bbls. which, in conjunction with the continued withdrawal of crude resulted in a decrease in stocks of all oils of 3,678,000 bbls. This was less than half of the September decrease but compares with an increase of 4,579,000 bbls. during October a year ago.

Refined Products

Daily average motor fuel production amounted to 1,206,000 bbls., a decline of 25,000 bbls. from September. The indicated domestic demand for motor fuel amounted to 32,267,000 bbls., a daily average of 1,041,000 bbls. This represents a material decline from the daily average of the previous month, and is 3 per cent below that of a year ago.

Exports showed a material gain over September and total motor fuel demand (domestic plus exports) for October, 1930, was only 2 per cent below that of a year ago. Stocks of motor fuel on hand October 31 amounted to 38,684,000 bbls., an increase during the month of 430,000 bbls. This compares with an increase of nearly 2,000,000 bbls. during October a year ago. At the current rate of total demand, the motor fuel stocks on hand at the end of October represent 31 days' supply as compared with 27 days' supply on hand a month ago and 28 days' supply on hand a year ago.

The refinery data of this report were compiled from schedules of 355 refineries with an aggregate daily recorded crude oil capacity of 3,677,650 bbls., covering, as far as the bureau is able to determine, all operations during October, 1930. These refineries operated at 65 per cent of their recorded capacity, given above, as compared with 351 refineries operating at 69 per cent of their capacity in September.

JOHN R. WHEELER DEAD

John R. Wheeler, of Tulsa, who had been identified with the legal department of the Sinclair Oil & Gas Co. since 1916, died at his old home in Titusville, Pa., on Monday, December 1. He had been in poor health for several years. Mr. Wheeler came to Tulsa in 1914 and joined White & Sinclair, and when the Sinclair Oil & Gas Co. was organized he became associated with it. The deceased is survived by Mrs. Wheeler and two sons, John R., of Peoria, Ill., and Richard Lee, of Tulsa. The funeral was held Tuesday in Titusville.

used in the manufacture of the pipe, Mr. Lege became convinced that this method could give the field the uniform quality of weld, together with speed in application, that it had been seeking. The A. O. Smith Corp. therefore agreed to weld some of the 16-inch and all of the 20-inch pipe in this Magnolia line. Trained welders were picked from the shop organization, gasoline driven generators were mounted on wagons shipped to the right of way, and the first unit was ready for work. After the pipe arrived in the field and construction started, it was found that the new engineering and methods were of even greater help than had been anticipated.

The arrival of the pipe without damage to ends, the stabbing ring with dam, and the accuracy and uniformity of size and roundness greatly simplified the line-up and stab for welding. Less trouble, less expense, fewer men and greater progress resulted. The bell and chill ring with dam offered an ideal welding preparation—a chill at the bottom of the scarf to weld against, insuring penetration without danger of icicles—a channel or scarf of uniform shape and width permitting closer stabs and placing weld in tension—less weld metal to be deposited and, because of insured penetration, no necessity of building up as high as with the old methods. Moreover, the new method permitted the roll welding of strings 300 to 600 feet long where the right of way permitted, reducing by more than half the number of tie-ins required.

On this job the welders produced four and five times the number of welds per day per man that has been produced by the welding methods formerly used—and there was not a single failure. On 20-inch pipe, roll welders regularly produced 30 to 32 welds in nine hours, and the bell hole or tie-in welds were completed in 40 to 45 minutes each. Expansion joints placed in the line at intervals relieved the necessity of lowering in and backfilling except at certain times of the day, and made it possible to keep those operations up during regular work hours and in their regular sequence. It was possible also to cut down the width of the ditch, as it was no longer necessary to introduce as much slack through "side walloping" as had heretofore been considered advisable.

Since this was the first attempt on the part of a manufacturer to supply products and field help to expedite the construction of pipe lines, it was reasonable to expect that some difficulty would be encountered in developing the proper procedures for applying the new products and the new welding method. Nearly two years of trouble-free operation, however, seem to indicate that the procedures established on this line were fundamentally correct.

First Job

The first job was enough to indicate the great possibilities of construction development. In spite of the handicap of a first attempt, with its resulting extra expense and false starts, enough of an impression was made to cause Magnolia, when building its next line a year later, to specify the same type of construction. With the experience of one construction job behind them, the A. O. Smith Corp. was enabled to design and build its field equipment more intelligently to suit pipe line conditions.

This second line was composed of 237 miles of 12-inch, 14-inch, 18-inch and 20-inch pipe in 30-foot lengths. Four pipelaying and welding gangs were put to work and the line was completed in 97 days. Each welding crew was made up of eight welders, a mechanic and a foreman, making a total of 32 welders at work on the line. Upwards of 42,000 field welds were completed, and there was not a single failure.

At no time during construction did the welding or testing interfere with progress. In fact, all construction operators found themselves being pushed by the welders; from the ditching, which found difficulty in keeping out of the way, to the lowering and backfilling, which feared to get hopelessly lost. The line went into operation immediately upon completion, and has rendered satisfactory service with no interruptions since. Magnolia expressed satisfaction over their construction costs, and the various contractors admitted a successful contract.

Work on Uinta Line

Later, the Uinta Pipe Line Co. contracted for this same type of construction on its Wyoming and Utah line—287 miles of 14, 16, 18-inch pipe. This line traverses a rough, hilly section of western Wyoming, through and over the Wasatch range of the Rocky Mountains, bringing gas into the Salt Lake Valley.

Work started on this line from the Salt Lake end in the middle of January, 1929. The ground was covered with snow, and the temperatures were below zero. With the line following narrow canyons with very little room to work in, and hills and mountains over which it was laid offering no possibility for machine work, the numerous bends made necessary by this rough country were a great problem. Here the expansion joint as a bending medium was found to be of great value. The joints were roll welded into the line at the places where bends occurred, and made a simple job out of one that would have been practically impossible under the existing weather and right of way conditions. These expansion joints also supplied all necessary slack on this line, which was of utmost importance, since the temperature range is from 130° in the summer to 50° below zero in winter. In this line, a total of 11,000 expansion joints of 14, 16, 18-inch diameter were used, and every one a bend.

Welding operations were carried on regardless of below zero temperatures, snow and sleet storms and high winds. In spite of these adverse weather conditions during the time the line was under construction, not a single Smithweld failure in operation has been reported, after one of the most severe winters in the history of that section.

At Kettleman Hills

The opening of the Kettleman Hills Field in California required the construction of several hundred miles of large diameter gas lines, nearly all of which was welded in the field by A. O. Smith organization. These operations included the construction of the largest natural gas line in the world—123 miles of 26-inch outside diameter in 40-foot lengths—which is a part of the distribution system maintained jointly by the P.G.&E. and the Standard Oil of California. The use of 40-foot joints, together with the new method of preparing ends for line-up and welding, expansion joints and factory bends, made possible progress of upwards of a mile of line a day per gang, even in diameters as large as 26 inches. In the entire distribution system the P.G.&E. and Standard Oil of California not an interruption of service in operations has been experienced.

Seventy miles of 20-inch pipe in 40-foot lengths with double bell and chill ring field joints was constructed by the Southern California Gas Co. from Kettleman to Elk Hills. A single construction crew and welding gang completed this line in 68 days. This line was put in operation two days after the final tie-in was made. When Southern California started its second line some time later, the same type of construction was specified.

The A. O. Smith field supervising organization is being made up of leaders, who, in addition to being trained in the application of the methods developed by the Smith corporation, have had many years of practical pipe line experience in all parts of the country. They have been present on all major pipe line construction in the past three years, either supervising activities or as representatives of the A. O. Smith Corp. This has kept them in touch with the latest developments in all construction programs, and has put them in a position to bring together and utilize on one job all the short cuts and expense-reducing ideas developed in the last three years.

Picked Welders

The welders are men of known ability picked from the shop organization—men whose job for at least a year or more has consisted of nothing but welding all day and every day. After having established their ability in the factory, these men were trained under actual field conditions. Since the Smith method of welding as applied to the field is identical with that used in the factory, these men required only to be acquainted with field conditions—they were already expert welders. The pipe was lined up, stabbed over the ditch, rotated for welding exactly as in the field; actual field equipment was furnished in this school; tie-in and bell hole welds were made and work was carried on through any and all kinds of weather. After a man had been through enough of these conditions to acquaint him thoroughly with what he could expect in the field, if he still had a desire to become a field welder, he was sent out on the job.

This care in picking and thoroughly training the field workers has been rewarded by the consistently uniform quality and speed of progress maintained by the welding gangs. No welders are hired in the field, and when replacements or additions are needed they are furnished through the factory. In this way, the cut-and-try and hire-and-fire methods of building up a pipe line welding crew have been eliminated, and with them the chance of poor workmanship while trying a man who later proves undesirable.

Since the A. O. Smith Corp. can include these men in the factory organization at times when no field operations are under way, it is possible to maintain this group of trained field welders and have them ready for the field at a moment's notice.

The great advantage of a trained organization such as this is that it assures just as efficient progress and the same quality of workmanship at the start of the line as is being secured at the finish. The ability to finish up a job of pipe line welding with the same group of welders who started the job is in itself a very valuable asset. At present the A. O. Smith field force consists of enough welders who have the experience of several hundred miles of pipe lines behind them, and enough equipment to weld from 22 miles of 10-inch pipe to 17 miles of 20-inch pipe in an average nine-hour day. In other words, enough to completely equip for 17 to 22 field gangs, each capable of welding a mile per day.

Welding Equipment

The welding equipment is built up around the Smith method of welding, and consists of a six-cylinder gasoline-driven engine, direct connected to an electric generator of suitable size. The whole unit is mounted on a special steel frame and wheels, supported on roller bearings. Only one arc is supplied from each generator, so there can be no variation of current or heat due to arc interference. The experience gained in welding nearly 2,000 miles of large diameter pipe in all manner of weather and right of way conditions has produced a piece of field welding equipment which gives uninterrupted service day after day while in the field. In each gang, a competent mechanic is furnished to maintain and care for the equipment. At the end of each job, all wearing parts are replaced, insuring the start of each new job with the equivalent of new equipment.

Each gang is directly in charge of a competent field foreman. Where more than one gang is working on a line, a general foreman is placed in charge to insure co-ordination of all gangs.

The number of generators required by each gang is determined by the progress requirements, the size of the pipe and the type of country the line traverses. Assuming an average condition of right of way, an eight generator gang consisting of foreman, mechanic and nine welders (one spare man) will produce an average of 220 10-inch welds, 175 16-inch welds, 132 20-inch welds or 110 24-inch welds per nine-hour day. The possibility in good level right of way is 30% greater, but these figures present a conservative average.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 145)

Column 6—Oil below 14 gravity posted at 45 cents.
Column 8—Posted by General Petroleum Co.
Kettleman Hills—Union Oil Co., September 22, 35 to 39 gravity, $1.10; 40 to 44 gravity, $1.20; 45 to 49 gravity, $1.35; 50 to 54 gravity, $1.50; 55 gravity and above, $1.65. Standard Oil Co. of California, 55 gravity and above, $1.65.
Column 5—Price change posted by Standard of California September 16.
Column 6—Oil below 14 gravity posted at 45 cents.
Column 8—Posted by General Petroleum Co.
Kettleman Hills—Union Oil Co., September 22, 35 to 39 gravity, $1.10; 40 to 44 gravity, $1.20; 45 to 49 gravity, $1.35; 50 to 54 gravity, $1.50; 55 gravity and above, $1.65. Standard Oil Co. of California, 55 gravity and above, $1.65.

DETERDING OPTIMISTIC ON THE FUTURE OF OIL

(Continued from Page 148)

regular quarterly dividend of 50 cents, payable January 2 to stock of record December 16.

Northern Pipe Line

Northern Pipe Line Co. declared regular quarterly dividend of $2, payable January 2 to stock of record December 15.

Andian National

Andian National Corp., Ltd., has declared a dividend of $1, payable December 15 to stock of record December 2. In June a similar dividend was paid.

American Natural Gas

Profit of the American Natural Gas Corp. and subsidiaries for 12 months ended September 30, 1930, was $645,115, after general taxes, subsidiary preferred dividends, depreciation, depletion, interest, etc., against $488,510 in 12 months ended September 30, 1929.

S. O. of Kentucky

Standard Oil Co. of Kentucky has declared an extra dividend of 20 cents and the regular quarterly dividend of 40 cents, both payable December 31 to stock of record December 15. An extra dividend of the same amount was declared in the preceding quarter.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Apr. 23	53.39	Aug. 13	43.53
Apr. 30	53.70	Aug. 20	43.79
May 7	50.33	Aug. 27	42.83
May 14	51.67	Sept. 3	42.71
May 21	49.71	Sept. 10	42.84
May 28	50.98	Sept. 17	42.43
June 4	50.94	Sept. 24	40.62
June 11	46.65	Oct. 1	37.78
June 18	41.41	Oct. 8	35.85
June 25	42.37	Oct. 15	35.21
July 2	44.13	Oct. 22	31.88
July 9	44.11	Oct. 29	32.80
July 16	46.42	Nov. 5	31.77
July 23	46.06	Nov. 12	30.18
July 30	44.89	Nov. 19	31.54
Aug. 6	45.24	Nov. 26	30.86

START TEST IN MISSOURI

The Midland Oil & Gas Corp., a Delaware corporation, headed by E. G. Anderson of New York City, president and treasurer, announces that it has started its No. 1 well in Section 14-38n-31w, in Bates County, Missouri, near the town of Rich Hill. The well was spudded in November 6 and at present is down 600 feet. The contract calls for a hole 3,600 to 4,000 feet deep.

This test is located near the site of a well drilled many years ago to a total depth of 3,471 feet and abandoned because of cave-in. It is stated that a showing of oil was had in this old well.

The Midland Oil & Gas Corp. has about 12,000 acres under lease in the vicinity of this location, and in addition to Mr. Anderson, president, the other officers are: I. Haas, secretary, New York City; L. M. Williams, Ventura, Calif., vice president; J. R. Clay, Kansas City, Mo., vice president; A. Amman, Kansas City, Mo., vice president; and Jacob Seeger, director, New York City.

CALLED EAST BY DEATH

Fred Dumraese, in charge of Prairie Oil & Gas Co.'s land department, at Wichita, Kans., has gone to Milford, Conn., being called there by the death of his mother.

NATURAL GASOLINE QUOTATIONS LOWER

(Continued from Page 30)

the week which indicated that gasoline prices would shortly recover from the low levels obtained in November. There was at least a 1-cent spread in sales of U. S. Motor gasoline and other grades. Some of the larger refiners are selling their jobber trade on a basis of 5¼ cents for U. S. Motor gasoline but other sales were being made as low as 4 cents. The low prices generally came from refiners, who as just explained, have been selling to points long distant from their plants and are compelled to absorb large freight rates.

The higher gravity gasolines are moving slowly. As one phase of a generally weak market, many refiners are making a U. S. Motor grade for their customers which meets practically all the essential volatility requirements of the higher gravity grades. This situation naturally has reduced the normal winter demand for the high gravity gasolines and blends. In fact, buyers are usually more concerned with the antiknock rating of their motor fuels than they are about the volatility. A high antiknock rating is more likely to bring a premium price from the buyer than a high gravity. No new export buying was reported in the Mid-Continent during the week.

Kerosene

The kerosene situation is unchanged. Refiners who have regular outlets report a fair demand and in a few cases, where operators have reduced their crude runs to stills, the demand exceeds the supply. However, there is plenty of kerosene still available from several sources for the scattered spot demand, the total volume of which is not large. Sales of the 41-43 water white grade are being made over a price range of 4⅛ to 4¾ cents.

Fuels

The demand for fuels regardless of whether it is furnace oil distillate, gas oil or residuum continues to center in the low cold test material. Prices on these low test grades are steady and the demand is fair.

The low test grades are being sold over wide price ranges. Low gravity, high cold test fuel oils have sold as low as 37½ cents in Oklahoma during the past week. At the same time, the bottom on a low cold test grade is around 50 cents. For low test grades prices range up to 90 cents for the 28 to 32 gravities. The demand for the high gravity grades is good.

Some reductions have been made in gas oil in adjoining areas but Oklahoma quotations are generally unchanged. The industrial grades are available to a low of 2⅛ cents. Low cold test, straw color with flash under 200° F. are not plentiful at a low of 2½ cents. The higher gravity grades of low cold test start at a low of 2⅝ cents and range up to 3 cents for prime white material.

Lubricants

Bright stock prices have been reduced an additional 1 cent a gallon by several manufacturers in Oklahoma in order to meet outside competition. One of the largest manufacturers now sells a 150-160 grade of 0 to 5 cold test at 20 cents with 19 cents for the 15 to 25 cold test. Competition continues keen for this product in both the domestic and export markets.

Steam refined stocks are quoted over prices which range from the prevailing market for the high gravity fuel oil to 6 and 7 cents a gallon.

More inquiries for wax are reported. Price ranges are unchanged.

LOUISIANA PIONEER DEAD

SHREVEPORT, La., Nov. 29.—William Bennett McCormick, 60, died at his home here after a lingering illness. He was one of the first to drill in Caddo Parish, and with the late S. S. Hunter piped gas to Shreveport. He was a pioneer driller in the Monroe Field, De Soto Parish and near Houma in South Louisiana.

E. E. TYER IS PROMOTED BY OIL WELL SUPPLY

E. E. Tyer, formerly district manager of the Oil Well Supply Co.'s Gulf Coast district, has been promoted to the tubular goods department of the Midwest division

E. E. Tyer

as special representative. Mr. Tyer will have charge of all sales of National Tube Co. products in South Texas, Louisiana and Arkansas, with headquarters at Houston, Tex.

He is well known to the oil fraternity. He entered the service of the company at Shreveport, May 1, 1919, acting as store manager there until July 1, 1929, when he was promoted to district manager, in charge of Shreveport, Smackover and El Dorado. On December 16, 1929, he was made district manager of the entire Gulf Coast district.

EMPLOYES GIVEN VOICE

Employes of the Standard Oil Co. of New York have received a voice in the management and will participate, through their representatives, in fixing compensation and working conditions, it was learned yesterday. This institutes a departure of the company in dealing with its employes. Although only the marketing division is included now, it is understood that the plan may be extended later to the refinery and other departments.

H. A. Wilkinson, vice president of the Standard Oil Co. of New York, in discussing the plan at the first meeting of the representatives of the employes, said that the management faced the necessity of developing some plan to take the place of the former scheme of personal acquaintance between employes and executives. He said that the groundwork of the scheme was mutual confidence, fairness and an attitude of tolerance on both sides in ironing out their difficulties.

The joint agreement as accepted at the first meeting of the New York City division provides that the elected representatives of employes and the management shall meet in joint conference to discuss and settle all matters of mutual concern, including wages, hours and working conditions, subject to final approval by the directors of the company. The joint conferences will be held quarterly.

A similar plan already is in operation among employes and the management of the Tide Water Oil Co.

ADD DE FLOREZ UNIT

BUTTE, Mont., Nov. 29.—The International refinery at Sunburst, Mont., on the west side of the Sunburst Field, is placing a De Florez cracking unit at its plant and will start cracking Sunburst crude in the near future. The new plant is expected to start operation about the middle of November.

Late Fields

(Continued from Page 42)

made 220 bbls. in 25 minutes and was shut in. The oil was found in sand at 6,345-6,508 feet.

Clark-Cowden's No. 1 Brown, NE cor. SE NE, Section 12-4-7, swabbed 250 bbls. in 12 hours, extending production in the Allen Field a quarter of a mile south. The well was shut in. Sand was found from 1,933-35 feet.

Several new wells are expected in the Wilcox sand extension to the Wewoka Field during the week. Deep Rock Oil & Refining Co.'s No. 2 Douglass (50 acres), SW cor. NE, Section 30-8-8, has cemented casing at 3,848 feet and was connecting up before drilling into the pay horizon. The test had Simpson sand at 3,800 feet, Viola lime at 3,842 feet. Same company's No. 2 Douglass (10 acres), NE cor. SW NE, Section 30-8-8, was drilling at 3,880 feet.

Phillips Petroleum Co. and Hicks Drilling Co.'s No. 1 Crouch, NW cor. SW, Section 5-6-5, near Sacred Heart, was drilling at 4,337 feet with a hole full of fluid, no production. The depth was corrected owing to a mistake in the measurement.

Mid-Continent Petroleum Corp.'s No. 1 Harjo, NE cor. SW SW, Section 20-6-6, Konawa Pool, was drilling cement plugs at a total depth of 2,866 feet with 1,200 feet of oil in the hole. Gypsy Oil Co.'s No. 4 Harjo, SE cor. NW SW, Section 20-6-6, had a show of oil in sand at 2,843-45 feet, and was preparing to test. Empire Oil & Refining Co.'s No. 3 Dameron, SW cor. SE SW, Section 20-6-6, was drilling cement plugs at a total depth of 2,869 feet flowing 40 bbls. in 12 hours.

Blackwell Oil & Gas Co.'s No. 1 Gum Brothers, NW cor., Section 26-3-9, Coal County wildcat, was being abandoned as a failure at a total depth of 5,055 feet. The test was plugged back to 3,800-4,010 feet and shot with 30 quarts and was dry.

KANSAS

Scholl, Ray and others' No. 1 Seivers, SW cor., Section 19-8-3, Clay County wildcat, has resumed operations at 2,405 feet after being shut down for several months. The test has had two showings of oil, one at 2,057 feet and the other at 2,122-32 feet. The test is expected to be drilled to a total depth of 3,000 feet.

Two semiwildcat tests in Sedgwick County found water in the Simpson sand and will be abandoned as failures. Fisher & Lauck and Aladdin Petroleum Corp.'s No. 1 Russell, in Section 27-28-1, southeast of the Robbins Pool, had a hole full of water at 3,605 feet, where it will be plugged. It is located 2 miles southeast of production. The other test was Mission Oil Co. and Martle Oil Co.'s No. 1 Carlton, in Section 23-28-1. It had water in the Simpson at 3,426-32 feet, where it is shut down.

The wildcat test of Austin Oil Corp., No. 1 Rochfellow, SE cor., Section 6-13-12w, a wildcat in Russell County, is believed to be running favorable on structure. The Topeka lime was topped at 2,605 feet, and it was found about 45 feet higher in the test than it was at the Fairchild test 1½ miles northwest. The Fairchild test had several showings of oil. The Austin Oil Corp.'s test was drilling at 2,750 feet.

Rogers & Hipple's No. 1 Rainey, in Section 3-21-6w, a south extension to the Welch Pool, was flowing once every hour from chat at 3,367-74 feet. Tankage was being erected at the well and a production test will probably be made in a few days.

Dixie Oil Co. and Amerada Petroleum Corp. and others' No. 1 Zarger, NW cor. NE SE, Section 16-21-3w, McPherson County, extended production in the Voshell Pool, a half mile to the south, swabbed 313 bbls. the first seven hours. It started swabbing at the rate of 50 bbls. an hour and settled to 40 bbls. an hour. The well is shut down awaiting a pipe line connection.

W. C. McBride, Inc.'s No. 1 Whitwright, NE cor. SW, Section 30-19-1w, cemented casing at 3,412 feet, and was shut down waiting for cement. It offsets the Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, in the same section which was recently completed as a 3,500-bbl. well, in the deep sand horizon. It was the first well to produce in the Simpson sand in the Ritz Field area.

GULF COAST MARKET

HOUSTON, Tex., Dec. 2.—Recent sales of bulk fuel from Gulf Coast ports was reflected at the opening of this week by slightly stronger prices. Removal of considerable low priced material has left the Gulf Coast situation in better shape than it has been for some time with the result that Tuesday no fuel apparently was available below 67½ cents for cargo shipment. This was in contrast to prices as low as 62½ cents which hace been reported in the past two months. Bunker fuel, however, indicated no change and was quoted at 90 cents with but little variation.

While bulk fuel indicated a slightly stronger tone, gas oil and gasolines slipped some during the week. Gas oil for some time has been the bright spot in the market with sellers holding out for a strong price but lack of trading finally has resulted in some concessions being offered. Low zero test oil of 30 plus gravity was quoted from some sources Tuesday as low as 3½ cents, although some sellers were attempting to maintain a figure of 3¾ cents. Twenty-six-thirty gravity gas oil was quoted from 3¼ to 3½ cents, a reduction of a quarter cent.

Additional weakening of North Texas gasoline markets over the week-end has been reflected on the Gulf Coast in lower moving prices on contract material based on the North Texas market. This also proved a bearish influence to the spot market, resulting in some quotations at 6¼ cents; also some business still continued to be done at 6½ cents. Contract material is being forced out at 5¾ cents. No important change was indicated in pale and red oils.

NO ACTION ON 1931

Meetings were held in Tulsa on Tuesday for the purpose of ascertaining how much crude oil buyers would take in the first three months of 1931 and to allocate the purchases equitably. After hours of discussion it was decided to delay action until more definite information as to crude requirements is available. Other meetings will be held later in the month at which time it is expected the State proration committee will be enabled to draw up its petition to the Corporation Commission along lines that will be satisfactory to buyers and producers.

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of October		10 months ended Oct.	
Petroleum—	1929	1930	1929	1930
Crude ..... Bbls.	2,868,807	2,166,685	21,725,716	20,600,290
Crude ..... $	4,334,543	3,161,501	30,796,829	28,651,352
Total refined petroleum ..... Bbls.	13,092,268	10,712,963	105,313,475	106,138,339
Total refined petroleum ..... $	49,529,279	36,142,057	416,014,222	387,387,833
Gasoline, naphtha and other light products ..... Bbls.	5,967,128	6,133,362	50,097,124	55,424,141
Gasoline, naphtha and other light products ..... $	26,341,039	21,863,725	223,821,105	224,585,840
Oils, illuminating ..... Bbls.	2,237,235	1,401,011	16,841,950	14,400,997
Oils, illuminating ..... $	9,051,174	4,727,276	71,691,208	54,779,053
Gas and fuel ..... Bbls.	3,815,070	2,444,926	29,044,147	27,827,523
Gas and fuel ..... $	4,360,522	2,583,355	30,637,321	28,623,636
Lubricating ..... Bbls.	1,056,924	720,781	9,173,382	8,352,281
Lubricating ..... $	5,566,966	6,817,763	87,663,902	77,566,381
Other refined petroleum ..... Bbls.	15,911	12,383	156,872	133,397
Other refined petroleum ..... $	209,578	149,938	2,200,656	1,832,952
Paraffin wax ..... Lbs.	39,091,116	31,721,287	266,213,430	241,905,513
Paraffin wax ..... $	1,578,773	1,011,213	11,961,947	8,864,261

TOUR OF MOUNT PLEASANT, MIDLAND AND CLARE COUNTY, MICHIGAN, FIELDS

By George A. Whitney

MOUNT PLEASANT, Mich., Nov. 29.—In a three-day trip by automobile over the Mount Pleasant-Midland Field it was learned that while there has been little activity in drilling operations for the past couple of months the talk is there will be a revival in work during the winter, regardless of cold weather. The only thing that will retard wildcat work will be deep snows of which the State usually has plenty.

During a stop at the hamlet of Coleman, on Route No 10, in Midland County, it was learned that a large area is being leased in both Warren and Edenville Townships, the bulk of the leasing being in the vicinity of Edenville, in the northeast part of Edenville Township, where it is reported the territory will soon get some important wildcat work. This area is around 25 miles or so northeast of the Pure Pool, along the division line of Isabella-Midland Counties. In Mount Haley Township, Midland County, the Ohio Oil Co. is reported to hold a large acreage under lease, with expectations of doing some development work. This area lies only a few miles to the southwest of the town of Midland and around 17 miles east and south of the Pure Pool.

The latest outstanding strike was made by the Geneva Oil Development Co., of Midland, on the H. J. Nicholson 149-acre farm, SW Section 7, Deerfield Township, Isabella County, and about 3 miles almost directly east of the discovery well drilled by the Isabella Oil & Gas Co. on the Keller-Mitchell 400-acre farm in Section 10, Bloomfield Township, same county, which was reported good for 13,000,000 feet when drilled in a short time ago. The Nicholson farm well is estimated good for around 1,000,000 feet and brings the gas field only about 8 miles from Mount Pleasant. The gas was found on the Nicholson in the Marshall formation at 1,363 feet, making it the second good gas well brought in during the present month, the other being the Rockford Oil & Gas Co.'s No. 1 on the J. Weidman 160 acres, NW SW, Section 9, same township, reported at 2,500,000 feet. With the two gas wells mentioned there are No. 2 on the Keeler-Mitchell, Section 10, Bloomfield Township; Isabella Oil Development Co.'s No. 1 Bartlett-Mitchell, SW SW, Section 3, and the Pure Oil Co.'s No 1 S. E. Wille 652-acre farm, Section 4, same township, making a production of better than 20,000,000 feet. These five gas wells cover an area of close to 4 miles east and west.

Natural Gas Area

From the natural gas area in Bloomfield and Deerfield Townships, Isabella County, comes a report that the contract offer of the Consumers Power Co. proved to be unsatisfactory to the Isabella Oil & Gas Co. and the Pure Oil Co., who have drilled the largest number of the recent dry gas wells. This local Michigan utility was apparently much interested in the development of the natural gas supply and is understood to have a right of way all leased from the field into Mount Pleasant. However, an offer has been made for the gas by the East Ohio Gas Co. through "Si" Riggler, of former big league baseball fame, who says his company will guarantee to take a minimum of 4,000,000 feet daily at a price of 12 cents per 1,000 feet. This was the same price formerly mentioned by the Consumers company. A meeting of the producers in the Bloomfield section, which already has a potential gas production of 20,000,000 to 30,000,000 feet, will be held shortly and the East Ohio Gas Co.'s offer will be accepted or rejected by the middle of the month, or a little later. The Pure Oil Co. is asking, according to reports, for a minimum price of 15 cents per 1,000 feet for the gas from its wells, and if it should be successful in getting such bonafide offer, the Ohio company, it is said, will raise its bid to the 15-cent level. According to Mr. Riggler, the Ohio company will present a security of $5,000 that it will complete a pipe line for the gas and be ready to take the minimum of 4,000,000 feet within a 30-day period from the time the offer is accepted.

The East Ohio Gas Co. is one of the large gas concerns in Ohio, with Cleveland as its headquarters, and it would mean good business to get a company of this kind within the State.

Tests in Clare County

There is a little excitement in Clare County, to the north of Isabella County, where both oil and gas have been found in commercial quantities, but the county has had but a few tests drilled so far. To the south of Clare along Route 127, the first development is shown in Vernon Township, Isabella County, where the Mellon-Pollock Oil Co. has some good looking territory and drilled a test on the Bowman farm, west of the highway in Section 27, which produced 72 bbls. initial and than showed salt water, but the field man said it was a commercial producer. Across the highway the Ohio Fuel Supply Co. and the Wittmer Oil & Gas Co. drilled a test on the F. Battie 80 acres, E half SW, Section 26, same township, that struck a well reported good for 1,000,000 feet in the Marshall formation at 1,321 feet. The Bowman farm well was reported at a total depth of 3,779 feet. In the same vicinity the Gibson-Johnson-Borden Co. is drilling No. 1 on the William Mahen 80 acres, E half SW, Section 27, also drilling No. 1 Frank Scott 40 acres, NW NE, Section 35, Vernon Township, and has made locations for No. 1 Charles Durnin 40 acres, N half S half NE, Section 22, same township, and for a test on the John Brief 80 acres, N half SW, same section. Meridian Oil & Gas Co made a location on the E. L. Russell 120 acres, NW, same section. Unknown parties drilled a dry hole on the McManaman farm, of 40 acres, being the E half W half SE, Section 31, same township.

The next well to the south along the Highway 127, comes the "doodlebug" well drilled by J. O. Duryee on the Bullard-Johnson, at the town of Rosebush, Section 10, Isabella Township, which was dry at a total depth of 4,995 feet. Wittmer Oil & Gas Co. made a location on the L. McKenzie 40 acres, NE NE, Section 25, Isabella Township, north of the hamlet of Jordan.

In the Leaton Pool

Then comes the active Leaton Pool, 3 miles to the east of Route 127, 4 miles north and 3 miles east of Mount Pleasant. This Leaton Field, which lies in Denver Township, Isabella County, was opened by the New York Petroleum Royalty Co., on the P. J. Marthey farm, Section 19, which came in with a large initial production and caused a stampede to that area for leases, and at the present time the town which consists of only a few houses, a store and a depot on the Pere Marquette Railroad, is getting pretty thoroughly tested, especially on the town lots where several new rigs are standing where one can almost step from one to another. B. A. Isabell & Co. is setting a long string of casing in its No. 1 on the B. Keehbaugh 37 acres, in the E half E half NE, Section 30, Denver Township, and at the south side of the town of Leaton.

In the Leaton Pool, Denver Township, the Ohio Producing & Refining Co.'s No. 1 on the J. C. Epple 80 acres, E half SW, Section 19, is reported good for 200 bbls., while the same company's No. 2 on the J. C. Epple 40 acres, NE NW, Section 30, according to late advice, started at around 275 bbls. initial and same company's No. 2 Wezenski, S half SW SW, Section 19, is said to be a 100-bbl. producer.

Outside of the Leaton Pool, but in Denver Township, half a dozen dry holes were found scattered over a wide area as follows: No. 1 H. W. Cooley, SW SW, Section 25; No 1 R. Adams, NW SE, Section 35; No. 1 G. Mitchell, SE SW, Section 34; No. 1 M. Menerey, SE SE, Section 27; No. 1 E. G. Graham farm, NW NW, Section 33, and No. 1 J. H. Ostram, NE NW, Section 32 all in Denver Township. In the same township unknown parties are drilling Nos. 1 and 2 on the L. Cole 59 acres, being the north 60 acres of the W half SW Section 19, and unknown parties on the Roberts, in the SE Section 19.

In Chippewa Township, Isabella County, the Pure Oil Co.'s No. 3 Sarah Roebuck, NE NW, Section 13, is reported at 150 bbls. initial. Mount Pleasant Oil & Gas Co.'s No 3 Thompson-Bortz, NW Section 12, is rated at 100 bbls. initial.

Lidster Farm Deep Test

The record of No. 1 Lidster farm, NW Section 18, Dundee Township, Monroe County, Michigan, owned by J. W. Morris, trustee, of Pontiac, Mich., and contract work done by Goll, Graves & Mechling, Saginaw, Mich., is of much interest to the operators. The formations passed through were approximately as follows:

Depth (feet)	Formations
0 to 70	Loom and clay
70 to 375	Lime
375 to 450	Lime (grit) (very close)
450 to 1,275	Lime
1,275 to 1,460	White lime
1,460 to 1,600	Dark gray lime
1,600 to 2,060	Blue slate
2,060 to 2,100	Pink shale
2,100 to 2,200	Brown shale
2,200 to 2,243	Black shale
2,243	Top Trenton lime
2,243 to 2,750	Trenton
2,750	St. Peter sandstone

In this test oil showing was found at 1,804 feet. Pipe record 105½ feet 8-inch; 1,600 feet 6¼-inch. Heavy drilling outfit to go any depth. Rig and tools still on the location. May drill deeper into the St. Peter sandstone.

Reau Farm Test

The record of No. 1 Reau farm, SE SW, Section 18-6s-6e, Dundee Township, Monroe County, Michigan, owned by W. J. Morris, trustee, total depth 2,258 feet, close to 200 feet in Trenton. Made good showing of oil, but nothing done to well for a few months; rig still standing with drilling tools

Mrs. A. Long Farm Test

The record of No. 1 Mrs. A. Long farm, S half E half NE, Section 2-7s-5e, Deerfield Township, Lenawee County, Michigan: Top Trenton lime, 2,373 feet; top St. Peter sandstone 3,123 feet; showings, 850 feet, oil; 959 feet, oil; 1,100 feet, oil and gas; 1,240 to 1,390 feet, oil and gas; 2,750 feet, oil, and 2,970 feet, oil.

This well is owned by the LeDue Oil Corp. and contractors on the well were Goll, Graves & Meckling; heavy steel rig and tools still over the hole.. This test is close to 5 miles southwest of the Lidster farm test.

VIRGINIA JOBBERS MERGE

NORFOLK, Va., Nov. 29.—Consolidation of the South Atlantic Oil Co. and the Colonial Oil Corp. into a firm which probably will be the largest gasoline distributing company in Virginia, has been announced by W. H. Ray of Norfolk, Va., who will head the merged organization which is to be called the Colonial Oil Co. Headquarters will be located at Norfolk. Assets exceed $700,000.

BUYS NORTH CAROLINA STATIONS

CHICAGO, Nov. 29.—The Sinclair Refining Co. has recently bought the following jobbing companies all of which are located in North Carolina: The Koon Oil Co., Ashville; the Piedmont Oil Co., Fostoria; the Imperial Oil Co., Winston-Salem; the Napoleon Oil Co., Mason, and the Cleveland Oil Co., Shelby.

VACUUM OIL CO. BUYS JOBBER

CHICAGO, Nov. 29.—The Vacuum Oil Co. has bought the W. K. Oil Co., of Albert Lea, Minn., and is continuing the business.

TO BUILD REFINERY EQUIPMENT

Announcement has been made by William H. Woodin, chairman of the board of directors of the American Locomotive Co., that there had been formed a new wholly owned subsidiary company to take over the business of oil refinery equipment engineering. All processes, plants, patents and machinery previously used by the parent company, are to be transferred to the new unit, and working capital will be supplied by the American Locomotive Co.

Alco Products, Inc., the new unit, will absorb and carry on the business of Heat Transfer Products, Inc., which company was acquired by the American Locomotive Co., in December, 1928. The principal activities of Heat Transfer Products, Inc., have been in the engineering and sale of heat exchangers, condensers, coolers, feed water heaters and other similar equipment, which are an essential and important part of the engineering of complete refinery plants.

For the manufacture of equipment to be designed and engineered by Alco Products, Inc., the American Locomotive Co. has allocated its Dunkirk plant, at Dunkirk, N. Y., which occupies about 60 acres of land, has every modern facility and a diversity of shops including foundry, forging, plate, pipe and machine departments.

The new unit will not as yet be capable of constructing complete equipment for hydrogenation plants, but can be expected to develop this special branch of oil refinery engineering in the near future, it was said.

PRICE WAR CAUSES SUIT

NEW YORK, Nov. 29.—New indictments are expected to be sought before the Plymouth (Massachusetts) County grand jury against 13 oil companies in business at Brockton, Mass., after indictments alleging conspiracy and restraint of trade against these companies were nol prossed in superior court at Brockton as inadequate.

The companies named in the previous indictments included the Standard Oil Co. of New York, Beacon Oil Co., Jenney Manufacturing Co., Cities Service Refining Co., Richfield Oil Corp., Shell Eastern Petroleum Products, Inc., Tide Water Oil Sales Corp., The Texas Company, Gulf Refining Co., Sun Oil Co., Atlantic Refining Co., Sinclair Refining Co., and Mexican Oil Corp.

The indictments were based on an alleged attempt to ruin the business of the Keith Oil Corp. of Brockton through a price cutting "war." Convictions would empower the Massachusetts attorney general, Joseph E. Warner, to revoke the charters of companies found guilty.

ALL WELDED TANKER HULL

NEW YORK, Nov. 29.—Atlantic Refining Co. has contracted with the Sun Shipbuilding Corp. of Chester, Pa., for an all welded steel Diesel-electric tanker.

The new boat, 200 feet in length, will have a beam of 34 feet, a molded depth of 12 feet and will carry three 150 horsepower Cooper-Bessemer Diesel motors operating on a trio of electric generators. In addition, a main propulsion motor of 400 horsepower will be carried.

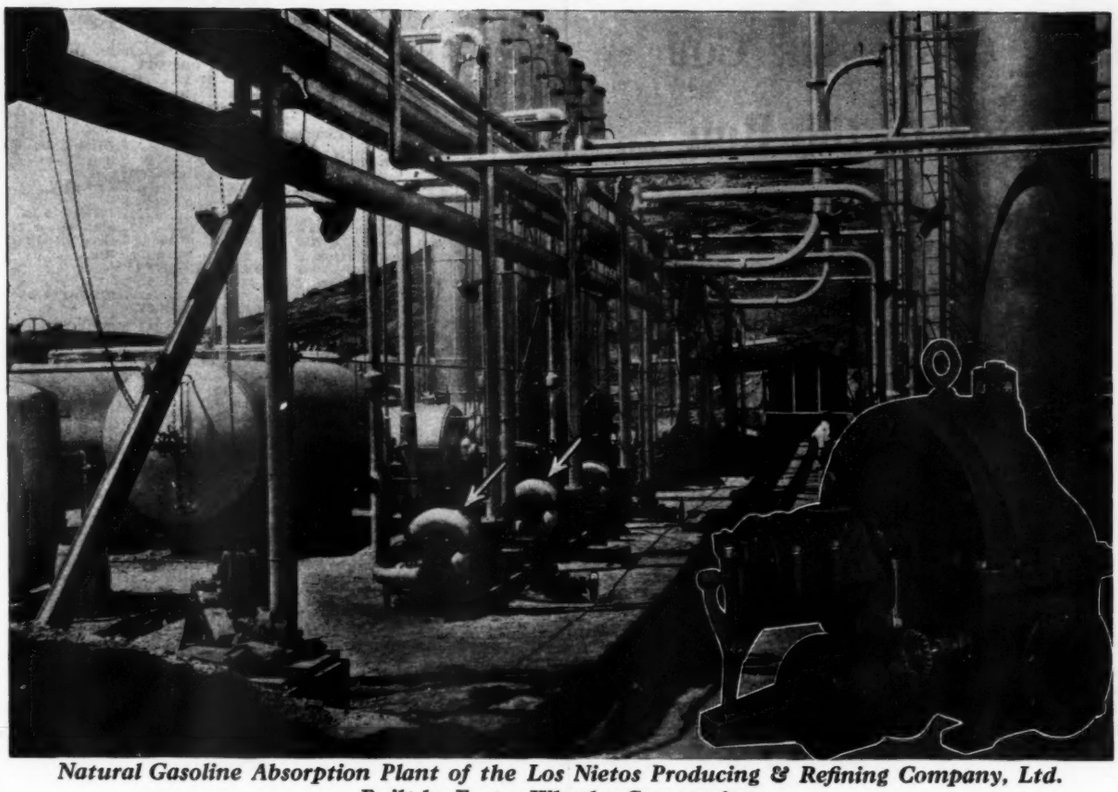
The tanker will be the thirteenth of her type in the United States, although her predecessors were built with conventional riveted hulls. The triple motors and generators are so arranged that any two may be used while the tanker is under way and the third may remain idle for reserve power or it may be overhauled should the occasion arise.

The new tanker will be ready for delivery early next summer.

TO MANAGE CHICAGO OFFICE

CHICAGO, Nov. 28.—J. B. Yaeger has been appointed sales manager at the Macmillan Petroleum Co.'s Chicago office succeeding Fred Norton who is now with the White Oak Refining Co.

TERRY



Natural Gasoline Absorption Plant of the Los Nietos Producing & Refining Company, Ltd. Built by Foster Wheeler Corporation.

AND NOW — TERRY TURBINES THAT OPERATE ON NATURAL GAS

At Kettleman Hills, California, the Foster Wheeler Corporation recently completed an unusually efficient gasoline plant for the Los Nietos Producing & Refining Co., Ltd.

In the layout of this plant it was found that if all the various pumps were operated by steam a large amount of the exhaust would be wasted.

The idea was then conceived of taking standard Terry solid wheel turbines and operating them on preheated dry gas. This has been done and the units operate to entire satisfaction.

The turbines act as power generating reducing valves. At the same time this method conserves steam, thereby giving a good heat balance and relieving the load on the boilers.

Full details will gladly be furnished on request.

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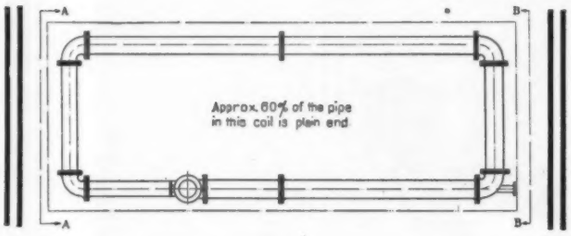
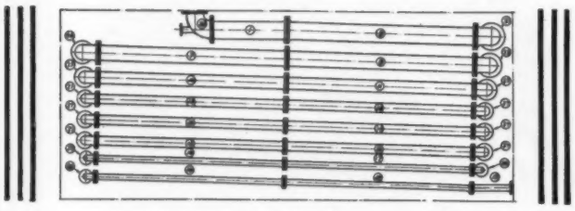
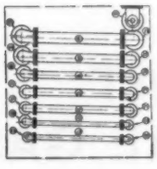


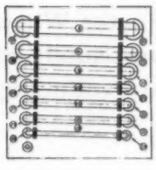
PLAN



SIDE VIEW



VIEW AA



VIEW BB

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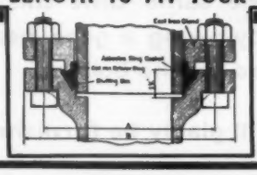

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WILDCAT OPERATIONS IN KANSAS

(Continued from Page 46)

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w .....1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; at 2,133-42 ft., 3,000,000 ft. gas; drlg. 2,455 ft.

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w ... Drlg. 4,930 ft.
McKenna et al's No. 1 Ralston, C NE Sec. 14-28-20w ....Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 .....Shut down 910 ft.

MARION COUNTY

Aladdin Pet.'s No. 1 Koch, NW NE Sec. 36-17-3 .....Rig.
Midwell's No. 1 La Master, NW cor. Sec. 31-22-4 .....Drlg. 435 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 32-19-5 ....Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 24-4-9 .....Drlg. 1,295 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 .....Shut down 50 ft.

McPHERSON COUNTY

United Pet. Co.'s No. 1 Kalgi, NE cor. Sec. 20-19-1w ....Spudding.
Henderson & Holden's No. 1 Sommerfield, NE SW Sec. 23-19-1w .....Fishing 2,100 ft.
Aladdin Pet.'s No. 1 Rudolph, NW NE Sec. 36-18-3w ....Shut down 250 ft.
Slick et al's No. 1 Randell, C SW SW Sec. 35-17-5w ....Drlg. 1,300 ft.
Aladdin Pet. Co.'s No. 1 Larson, C NW Sec. 22-18-4w ....Rig.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-24-43w .....Fishing 5-in. csg. 3,460 ft.

MORRIS COUNTY

Urschell et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7..Machine.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9 ....Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6 .....Shut down 2,420 ft.

NESS COUNTY

Gypsy Oil Co.'s No. 1 Coleman, C SW NE Sec. 25-17-25w..Rig on ground.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w .....Rig.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 .....Shut down 410 ft.

PAWNEE COUNTY

Phillips' No. 1 Cuthbertson, NE cor. Sec. 27-20-8w ..... Drlg. 3,615 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w .....Fishing 4,353-95 ft.; water.

RAWLINS COUNTY

Danciger Oil & Ref.'s No. 1 Unknown, SW cor. Sec. 3-2-35w .....Drlg. 2,000 ft.

RENO COUNTY

Braden et al's No. 1 Thersen, SE NE Sec. 6-22-4w .....Drlg. 3,665 ft.
Alco Royalty's No. 1 Kinney, SE cor. Sec. 16-27-7w .....Abandoned 3,925-32 ft.; water.
Shell Pet. Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w ....Wilcox 3,907-10 ft.; hole full of water; shut down.

RICE COUNTY

Allison-Fitzwilliams' No. 1 Blake, NE NW Sec. 9-18-10w..Rig on ground.
Gypsy Oil Co.'s No. 1 Koenig, SW NE Sec. 10-20-10w ....Rig.
Muth Bros. No. 1 Beyers, NE NW Sec. 21-19-9w .....Drlg. 2,000 ft.
Jasper & Beschka's No. 1 Cupp, SW NE Sec. 22-18-9w..Drlg. 2,010-20 ft.; 7,500,000 ft. gas; drlg. 3,168 ft.; shut down 3,315 ft.; water.
United Pet. Co.'s No. 1 Willman, NE cor. Sec. 29-21-9w..Shut down 3,305 ft.

ROOKS COUNTY

Streeter-Stearns' No. 1 Conger, SE NW NE Sec. 16-10-16w .....Drlg. 3,412 ft.

RUSH COUNTY

Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w..Drlg. 880 ft.

RUSSELL COUNTY

Empire Oil & Ref. Co.'s No. 1 Sherwood, SE NW NW Sec. 21-14-13w .....Fishing 3,278 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w .....Shut down 2,740 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w ....Shut down 2,155 ft.

SEDGWICK COUNTY

Streeter & Stearn's No. 1 Tobin, SW SE NE Sec. 5-22-2...Shut down 1,320 ft.
Branson et al's No. 1 Kincaid, SE NW NW Sec. 4-28-1...Abandoned 50 ft.
Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1..Rig.

SALINE COUNTY

Sampson et al's No. 1 Sudenderf, NE SE Sec. 30-14-2w..Drlg. 180 ft.
Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w .....Shut down 2,500 ft.

STEVENS COUNTY

Argus Gas' No. 2 Ponder, C NW Sec. 10-32-38w .....Comp. 2,530-2,751 ft.; 11,000,000 ft. gas.
Western Prod. Co.'s No. 1 Ponder, C NE Sec. 10-32-38w..Sand 2,532-2,643 ft.; 7,000,000 ft. gas; completed.
Western Prod. Co.'s No. 4 Fee, C NE Sec. 6-33-36w .....Comp. 2,672-2,781 ft.; 4,000,000 ft. gas; T. D. 2,850 ft.
Braden et al's No. 1 Theisen, SE NE Sec. 6-22-4w .....Rig on ground.
McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 23-32-39w .....Drlg. 1,130 ft.

SEWARD COUNTY

Liberal Gas' No. 1, C N half NE Sec. 4-35-34w .....Comp. 2,600-2,751 ft.; 2,000,000 ft. gas.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-33-2 ..T. D. 3,700 ft.; abandoned.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w ....Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 ....Drlg. 1,720 ft.

KENTUCKY FIELDS

(Continued from Page 62)

the Mrs. Clint Wilson farm, 2½ miles southwest of the discovery well. Richardson & Gragg drilled a good gas well on the W. R. Lester farm, near Canmer. Perkins Brothers' test on Will Meadows farm, 3 miles west of the discovery well, struck salt water at 750 feet and goes into the dry list.

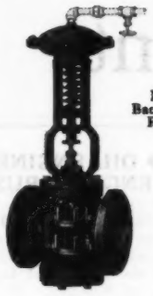
The new field is widening, extending to Horse Cave. Indications now show no let-up in activities, new drilling outfits arriving daily, many storage tanks being rushed to the field, and it now looks as though the Chas. C. Stoll Co. will have to put in another line to convey the production to Horse Cave for transportation by tank cars to Louisville.

Field Pickups

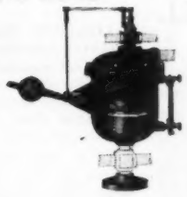
One of the best of the late completions in the Tri-County Field is James C. Ellis' No. 1 on the Hattie R. Mason 112 acres, in the Pellville Field of Hancock County, which after given a shot, produced an initial of 100 bbls. No. 2, same farm, is almost due for completion. Cox, Yewell and others' No. 1 Eulas Bolling farm, same field, was dry in the Jett sand and being drilled down to the Barlow sand.

One of the best gas wells found in Western Kentucky for a long time is on the Walter F. Milby farm, a mile from Greensburg, in Greene County, which adjoins Hart County on the east. This well is reported to have gauged 5,500,000 feet. Several drilling rigs have been unloaded from the railroad siding at Greensburg, and transported to the Gabe, Summerville and Gresham areas of the county where tests will be made for both oil and gas.

John H. McClurkin, geologist and operator, is making a farm map of the Legrande Field of Hart County, which will show the locations of completed wells as well as new locations.

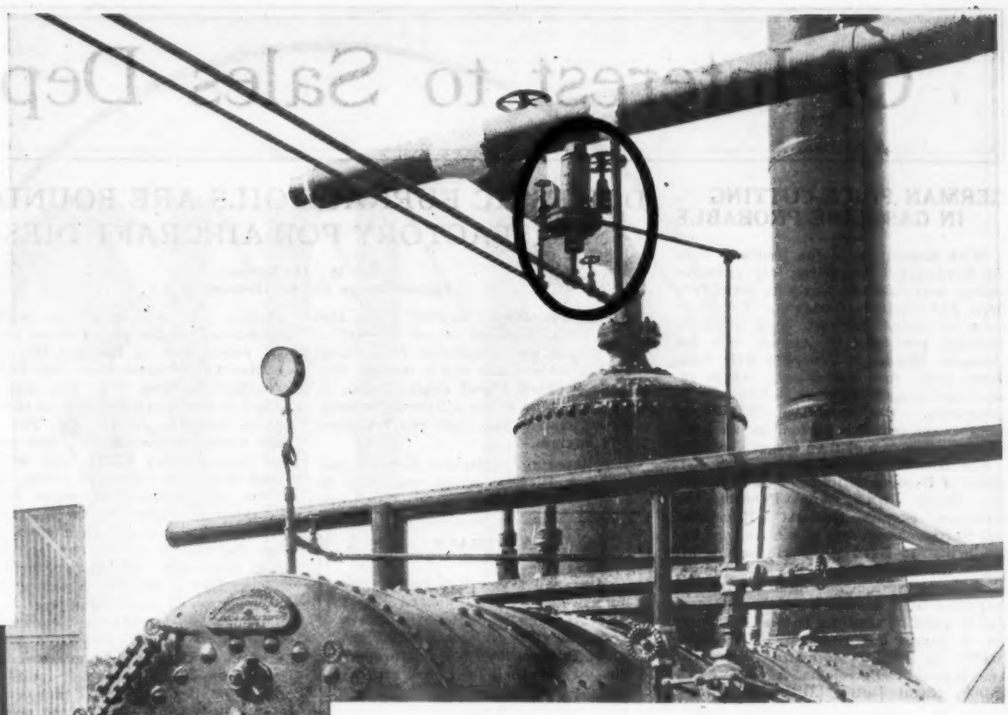


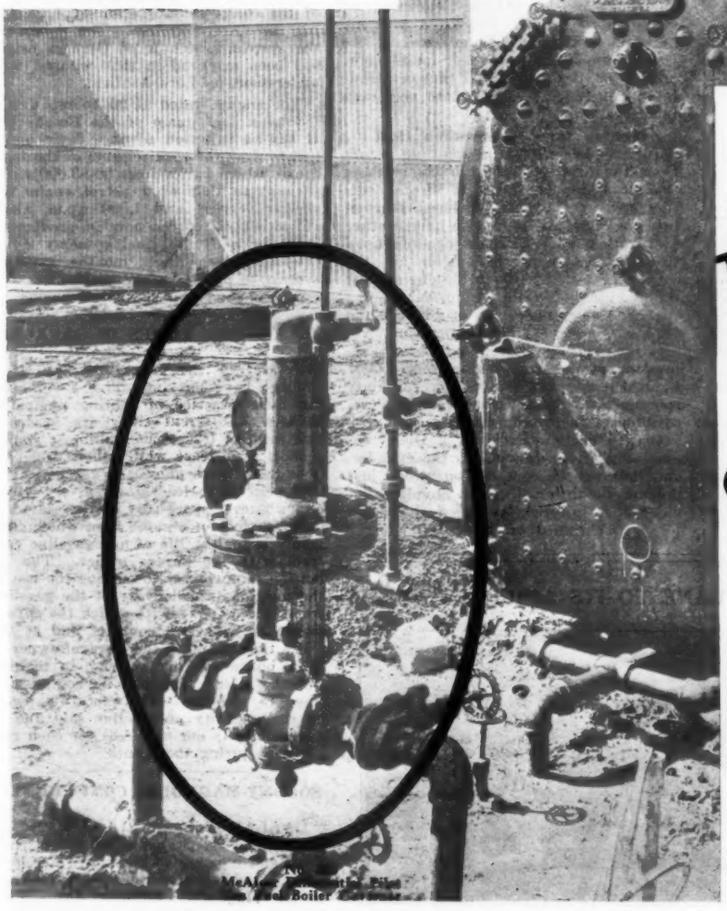
No. 311
Back Pressure
Regulator



No. 515
Level
Controller
and Pump
Governor

No. 686
Gasoline Trap





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All McAlear Pressure and Level Controls bring similar economies and advantages. For production activities, gasoline plants, refineries, pipe lines—there's a correct McAlear Product for the many varying oil industry conditions. Write our nearest engineer or send direct for Sections C-D-G-H and I of Catalog 30. Write today.

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378 Boulevard
Bayonne, N. J.

John G. Bell Co.
California Distributors
Los Angeles, Calif.
(Stocks Maintained at Los Angeles)

Coblentz Equipment Company
1119 Peach Street
Erie, Pennsylvania

Greene Bros.
620 Ohio Ave.
Wichita Falls, Texas

McALEAR

Of Interest to Sales Departments

GERMAN PRICE-CUTTING IN GASOLINE PROBABLE

With dissolution of the Deutsche Benzin-Kovention, comprising all gasoline-selling organizations, early in October a price war began in Germany. The retail price at filling stations, fixed at 32-35 pfennigs per liter in August, has not changed, though it probably will come down soon, for increasingly larger rebates are being allowed by distributors to consumers. On orders of 200 liters monthly the rebate is 1 pfennigs per liter, while it rises to 5 or 6 on larger amounts.

The Konsortium founded in 1928 consisted of German affiliations of Standard Oil, Royal Dutch, Anglo-Persian, the Russians, Steaua Romana (Rumania) and German producers of oils as coal by-products. It fixed wholesale and retail prices for all Germany but not quotas. Since consumption has been increasing there has been great competition in erection of gasoline stations, so that the number of pumps has risen to 45,000 from 10,000 in 1927. Standard (Deutsch-Amerikanische Petroleum A. G.) owns 14,000, Royal Dutch (Rhenania Ossig) 12,000 and Anglo-Persian (Olex) 7,000. The money invested in plants of this kind is calculated to exceed the value of the gasoline imported annually, and in the last three years the foreign companies have invested more than they have earned. Capital value of pumping stations is reckoned at 40,000,000 marks.

Owing to competition in erection of gasoline stations the American and Anglo-Saxon trusts tried to get an agreement on quotas of distribution, but the smaller companies would not approve the terms offered and thus the cartel was finally dissolved. Under present conditions, many of the latter will be forced out of business, but the Russians probably will stay in the field, whatever the prices.

OPENS TANK CAR SALE OFFICE

The Phillips Petroleum Co. has opened a tank car sales office at 310 South Michigan Avenue, Chicago, under the management of H. A. Gardiner. Mr. Gardiner was formerly in charge of the tank car sales for the company in Minneapolis, Minn. At the time of the consolidation of the Phillips and Independent offices in that city, the office of the Independent organization was retained under the management of C. T. Kennedy.

FUEL OIL CONSUMPTION GROWS

WASHINGTON, D. C., Dec. 1.—There was a constant increase in the consumption of fuel oil by electric public utility power plants in the production of electricity during July, August and September. In July the quantity so consumed was 711,478 bbls., in August 748,908 bbls. and September 836,574 bbls. Natural gas so consumed in July was 10,522,161,000 feet, August 11,091,793,000 feet and September 10,618,453,000 feet.—C. E. K.

TO MANAGE EASTERN DIVISION

D. Ralph Frizzoll has been appointed manager of refinery sales for the eastern division of the Macmillan Petroleum Corp. with headquarters in Chicago. Mr. Frizzoll has been in charge of refinery operations for the company in El Dorado, Ark.

RAILROAD FUEL OIL INQUIRY

The Chicago, St. Paul & Pacific Railroad has made inquiry for 40 cars of fuel oil to be delivered in December, January and February. Prices must be f.o.b. refinery with freight to Kansas City to be allowed.

DOMESTIC FURNACE OILS ARE FOUND SATISFACTORY FOR AIRCRAFT DIESEL

By W. H. Graves
Packard Motor Car Co., Detroit, Mich.*

Before we consider aircraft Diesel fuel oil as such, it might be of interest to many to see an installation of a Diesel engine in an airplane and a closeup view of the Packard Diesel engine; also, to know something of the difference between gasoline engines and high and low-speed Diesel engines.

The important difference between gasoline and Diesel engines can best be shown by the indicator diagrams. These are shown in Figure 1.

ABSTRACT

This paper describes briefly the fuel system of the Packard Diesel aircraft engine and how it differs from the Otto cycle or gasoline engine. It also describes the properties of the fuel oil which are essential and nonessential to the engine, and briefly touches on the relation of gravity, viscosity, flash-point, autogenous ignition temperature, pourpoint, distillation, sulphur, and ash to the proper operation of the engine.

These diagrams, taken from Mr. Woolson's paper, "Diesel Engines for Aircraft," in the Journal of the Society of Automotive Engineers for February, 1929, shows that which is of common knowledge, viz., that the gasoline engine operates on a constant volume or Otto cycle and the high-speed Diesel on a mixed combustion cycle in which the fuel is burned partly at constant volume and partly at constant pressure.

In the case of the gasoline engine, gasoline and air drawn in with the downstroke of the piston along the line AB, compressed on the line BC, burned on line CD, expanded on line DE, and exhausted on line EA. The high-speed Diesel is somewhat different in that only air is drawn in on line AB. The air is then compressed along BC, fuel injected and burned along CD_1D_2, and expanded along D_2E, and exhausted along EA.

The outstanding differences between the types of engine are the ignition and fuel injection systems. In a gasoline engine the fuel is ignited by an electric spark from the well known sparkplug, and the fuel is introduced as a combustible mixture of vapor and air. In this engine the fuel must be vaporized and mixed in the proper proportion with air to produce an explosive mixture. If too rich or too lean, it will not ignite regularly from the spark, and thus a carburetor is used to perform these necessary functions.

Ignition from Compression Heat

In the Diesel engine ignition occurs from the heat produced in compressing the air which is drawn in on the suction stroke. The heat produced in compressing this air may give temperature over rather wide limits, depending upon the temperature of the outside air, the rate of heat flow through the engine, and the compression ratio. A normal engine, with a compression ratio of 16 to 1 and an average summer air temperature, will give temperatures at the end of the compression stroke of approximately 1,000° F. which is sufficiently high to ignite spontaneously most petroleum oils, regardless of their properties.

On the suction stroke of a Diesel engine only air is drawn into the cylinder, and then on the compression stroke just previous to top-dead center atomized liquid fuel is injected. As this fuel reaches

(Continued on Page 166)

*Presented at eleventh annual meeting, American Petroleum Institute, Chicago, November 12, 1930.

SHELL ADDS BELLANCA PLANE TO ITS AIRCRAFT FLEET

The Shell Petroleum Corp. again has evidenced its belief in the future of aviation by adding a Bellanca Skyrocket to its fleet of aircraft. It recently lost its tri-motored Fokker in a $1,000,000 fire at the Chicago Municipal Aiport. With the Bellanca, Lockheed-Vega and Travel-air "Mystery" ship this company has available at all times, fast air transportation for its officials to enable them to keep in close touch with far-flung interests.

The new plane recently was flown from the factory of the Bellanca Aircraft Corp., Newcastle, Del., to the Lambert-St. Louis field, by Milton Girton, Shell company aviator and regular pilot of the new ship. It is of the same type as the Bellanca ship "Columbia" used by Clarence Chamberlain in his transatlantic flight, and by Captain Boyd in his recent flight across the Atlantic from Havre Grace, Newfoundland, to the Sicily Islands. The "Skyrocket," however, has a higher power rating than has the "Columbia."

The "Skyrocket," a six-place, high-wing, cabin monoplane painted in the characteristic yellow and red Shell colors, is powered with a 425-horsepower 9-cylinder Wasp motor. It has a maximum speed of 155 miles per hour, a cruising speed of 125 miles per hour, and a landing speed of 48 miles per hour. The overall length is 27 feet and 9 inches and its wing spread is 46 feet and 4 inches. The gas capacity is 120 gallons. The plane has special equipment for night flying.

HIGH-SPEED OIL ENGINE USED ON ENGLISH BUSES

LONDON, England, Nov. 29.—Three L.G.O.C. omnibuses equipped with high-speed oil engines were used recently in demonstrations at the Associated Equipment Co.'s works at Southall. It was said that these buses would be put into service at once.

In a test run of a double-deck bus driven by the new type of engine on the Great West Road, the police stopped the driver, alleging that he was exceeding 45 miles an hour. The bus was full of passengers.

The engine, which has passed from the experimental stage to that of production, is the result of nearly three year's intensive research, with the object of producing an engine using oil for fuel that in all respects would be comparable with the modern petrol engine. It is not constructed on the Diesel principle, but is of the compression-ignition type employing the "Arco" system. The patent for the system, which is of German origin, has been acquired in this country, it is understood, by Lord Ashfield.

The engine, rated at 95 horsepower, is fed by a fuel pump of the Bosch type. It has an injection advance device modified to meet the requirements of the speed range, which varies from 300-3,000 r.p.m. —equal to that of a petrol engine for similar service, and 1,000 r.p.m. above any other oil engine now in production.

In the matter of fuel economy a test extending over many months gave an average of 9.7 m.p.g., as against an average of 5 m.p.g. for the petrol engine.

LEASE FOR PUMPS IN GARAGES

Several of the major distributors of Chicago have put into force a set lease for their practice of renting pumps in garages. Different titles are used for this form of lease some calling it simply a short term lease while others designate it as their "curb pump and garage lease." The plan is to lease the delivery pump and whatever space may be necessary for its operation for a short term which commonly is for the life of any gasoline contract with the garage owner. The intention is obviously to confine the use of the pump to the delivery of the gasoline from the company with which the garage owner may have a contract and at the same time to give the garage owner a little bonus for his activity in making gasoline sales. The plan is so far confined to Chicago. The rental is based on the quantity of gasoline sold and is approximately one-half cent for each gallon sold during the month.

SOCONY-MAGNOLIA CONFERENCE

DALLAS, Tex., Dec. 1.—C. F. Meyer, president of the Standard Oil Co of New York and a party of associates are here for a three-day conference with officials of the Magnolia Petroleum Co. With Mr. Meyer are A. F. Corwin and Frederick Ewing, directors of the Standard Oil Co. of New York; W. H. Correa, lubrication manager, and executives of the White Eagle Oil & Refining Co. of Kansas City, Mo.

MAGNOLIA AWARDED CONTRACT

NEW YORK, Dec. 1.—The Navy Department has awarded Magnolia Petroleum contract for 650,000 bbls. Grade A fuel oil at 85 cents a barrel delivered at Gulf ports. Magnolia also received a contract for 60,000 bbls. Grade C fuel oil at 70 cents a barrel delivered at Gulf ports. The Atlantic Refining was awarded contract for 35,000 bbls. Grade A oil at $1.36 a barrel delivered at New London.

SKILLED SUPERVISION

Guarantees the Quality

OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES—
GASOLINE—LUBRICATING OILS—
NAPHTHA—GAS—OILS—
WAX—PETROLEUM COKE—
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices: PITTSBURGH, PA.

District Sales Offices

New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

—Ocean Terminals—

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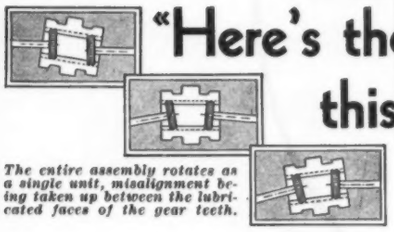
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas.
Galveston, Texas.

FAST'S Self-Aligning COUPLING



"Here's the Answer to this Coupling Problem"

The entire assembly rotates as a single unit, misalignment being taken up between the lubricated faces of the gear teeth.

DO YOU have coupling breakdowns resulting from the "fatigue" and failure of flexible members such as bushings, pins, springs, discs and grids?

By eliminating these flexible materials Fast furnished the answer to this baffling coupling problem. The simple mechanical principle has established a new and better coupling practice. Notice the diagrams above. Two spur gears are in complete and continuous mesh with the internal gears of a floating sleeve. The sleeve takes a neutral position, the error of misalignment being taken up between the lubricated faces of the gear teeth, and all necessity of flexible materials is eliminated.

Free From Shut-downs

Fast's Self-Aligning Couplings become part of the permanent transmission machinery of your plant. Give them the same care and they will last as long as the connected machines.

With Fast's Couplings your plant is free from production tie-ups formerly due to coupling break-downs. Check back over your records (or in your memory) and see how much delay, lost production and disorganized operation have cost you in both money and efficiency. Then compare this figure with the cost of installing Fast's and you will understand why they are economical.

Standardize on Fast's

Thousands of plants throughout the country have standardized on Fast's Self-Aligning Couplings on all new equipment and for all replacements. Every installation requirement in your industry is met by Fast's design. If you specify Fast's you protect yourself against coupling breakdowns. Any machinery or equipment builder will furnish them.

Mail the coupon to the Bartlett Hayward Company and receive a free copy of the new 10th Anniversary Catalog giving complete details of Fast's Self-Aligning Couplings and their application in your industry.

Fast's Coupling on Hydril rotary drilling outfit, made by Doheny Stone Drill Co., used by Capitol Drilling Co., Oklahoma City, Okla.

THE BARTLETT HAYWARD CO.

218 Scott Street, Baltimore, Md.

Send me the free bound copy of the new Fast's 10th Anniversary Catalog showing varieties of designs and installations, containing valuable data on coupling installation.

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TWELVE MONTHS' OIL PRODUCTION REMAINS ON DOWNWARD COURSE

The estimated production for the 12 months ending October 31 was approximately 926,367,000 bbls. The production for the 12 months ending in September was 941,435,520 bbls. If present curtailment plans continue through the year the total crude output of oil in the United States in 1930 may fall below that of 1928, and over 100,000,000 bbls. less than the 1929 production. The following production figures by pools are for the month of September:

SUMMARY BY PRODUCING DIVISIONS
Crude Oil Production in the United States in September

	Dly. av. (bbls.)	Month (bbls.)
Oklahoma	550,304	16,509,120
California	593,477	17,984,306
Texas	788,023	23,640,726
Kansas	113,517	3,405,510
Arkansas	52,776	1,583,280
Louisiana	66,935	2,008,060
Montana	8,546	256,380
Wyoming	50,423	1,512,690
Colorado	4,181	125,430
New Mexico	44,817	1,344,510
Eastern fields	113,200	3,396,000
Total September	2,392,199	71,766,012
Total August	2,436,036	75,517,106
Difference	43,837	3,751,094

MID-CONTINENT FIELD
Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Kansas	113,517	3,405,510
Oklahoma	550,304	16,509,120
North Texas	78,899	2,366,970
Central Texas	39,414	1,182,420
West Texas	274,157	8,224,710
East Central Texas	40,964	1,228,947
Panhandle Texas	79,600	2,388,000
North Louisiana	39,802	1,194,060
Arkansas	52,776	1,583,280
Total September	1,269,433	38,083,017
Total August	1,306,386	40,497,966
Difference	36,953	2,414,949

GULF COAST AND SOUTHWEST TEXAS
Daily Average and Monthly Production in September

Gulf Coast	194,151	5,824,543
Southwest Texas	107,971	3,239,136
Total September	302,122	9,063,679
Total August	310,914	9,638,518
Difference	8,792	574,839

OKLAHOMA
Daily Average and Monthly Production in September

County—	Dly. av. (bbls.)	Month (bbls.)
Washington	4,784	143,520
Nowata	4,697	140,910
Rogers	1,835	55,050
Osage and Eastern Kay Counties—		
Burbank	14,954	448,620
Osage, outside Burbank	24,817	744,510
Total	39,771	1,193,130
Tulsa and Wagoner Counties—		
Bird Creek, Owasso, etc.	3,060	91,800
Red Fork, Sand Spgs., Turkey Mt., Bruner	1,009	30,270
Bixby, Leonard	820	24,600
Broken Arrow, Coweta	789	23,670
Total	5,678	170,340
Tulsa, Okmulgee and Muskogee Counties—		
Okmulgee and Beggs	2,113	63,390
Mounds	1,168	35,040
Bald Hill and Haskell	2,318	69,540
Morris, Boynton, Cole	1,699	50,970
Total	7,298	218,940
Okmulgee, Okfuskee, Seminole, Hughes and Pottawatomie Counties—		
Seminole City	14,469	434,070
East Seminole	2,229	66,870
Bowlegs	14,728	441,840
Little River	24,619	738,573
East Little River	12,995	383,850
Earlsboro	47,925	1,437,750
Searight	7,283	218,490
Mission	6,867	206,010
Carr City	8,175	245,250
Maud	3,061	91,830
Total Seminole Field	142,151	4,264,530
Allen	15,478	464,340
Konawa	17,378	521,340
Asher	9,174	275,220
Pearson-St. Louis	24,563	736,890
Sasakwa	4,987	149,610
Beebe	3,580	107,400
Henryetta, Deaner-Lyons, etc	6,699	200,970
Wewoka	3,580	107,400
Cromwell	7,111	213,330
Papoose-Gilcrease	2,633	78,990
Jarvis-Helm	255	7,650
Weleetka	940	28,200
Yeager	564	16,920
Miscellaneous	644	19,320
Total	239,737	7,192,110
Creek and Tulsa Counties—		
Glen Pool, Jenks, Kiefer	6,336	190,080
Sapulpa and Fisher	506	15,180
Cushing-Shamrock	13,734	412,020
Bristow, Kellyville and Depew	11,846	355,380
Pickett Prairie and North Bristow	1,714	51,420
Eastern Bristow or Slick	4,421	132,630
Total	38,557	1,156,710
Pawnee County—		
Cleveland	2,664	79,920
Keystone	2,099	62,970
Jennings	2,004	60,120
Otoe	474	14,220
Ralston-Masham	175	3,750
Total	7,366	220,980
Payne County—		
Yale, Quay, Ingalls.	3,712	111,360
North Cushing	2,595	77,850
South Cushing	100	3,000
Mehan-Ripley	1,659	49,770
Total	8,066	241,980
Oklahoma County—		
Oklahoma City	100,739	3,022,170
Lincoln County—		
Stroud	894	26,820
Davenport	1,058	31,740
Kendrick	198	5,940
Chandler	1,638	49,140
Total	3,788	113,640
Kay, Grand and Noble Counties—		
Blackwell	943	28,290
Vernon	716	21,480
Otstot	950	28,500
Deer Creek	535	16,050
Ponca City	565	16,950
Mervine	264	7,920
Braman	3,044	91,320
Hubbard	1,310	39,300
Thomas	744	22,320
Garrett	6	180
Tonkawa	6,215	186,450
Billings	141	4,230
Miscellaneous	1,235	37,050
Total	16,668	500,040
Garfield County—		
Garber	4,748	142,440
Logan County—		
Lovell	564	16,920
Marshall	4,008	120,240
Total	4,572	137,160
Carter County—		
Healdton	12,065	361,950
Hewitt	7,024	210,720
Graham	2,444	73,320
Brock	902	27,060
Fox	2,067	62,010
Sholom Alechem	14,102	423,060
Total	38,604	1,158,120
Stephens and Cotton Counties—		
Loco-Milroy	1,445	43,350
Comanche	1,760	52,800
Duncan	4,121	123,630
Walters	3,646	109,380
Kilgore	322	9,660
Total	11,294	338,820
Jefferson County—		
Hambro, etc.	2,602	78,060
6s-5w	134	4,020
Total	2,736	82,080
Caddo County—		
Cement	3,932	117,960
Garvin County—		
Robberson	1,798	53,940
Grady County—		
Knox	2,832	84,960
Beckham County—		
Sayre	41	1,230
Marshall County—		
Madill	763	22,890
Total September	550,304	16,509,120
Total August	556,614	17,255,034
Difference	6,310	745,914

KANSAS
Daily Average and Monthly Production in September

Sedgwick County—	Dly. av (bbls.)	Month (bbls.)
Wright	9,441	283,230
Greenwich	2,429	72,870
Robbins	324	9,720
Eastborough	5,387	161,610
Miscellaneous	501	15,030
Total	18,082	542,460
Marion County—		
Florence-Urschell	427	12,810
Peabody	755	22,650
Covert-Sellers	673	20,190
Lost Springs	894	26,820
Davis	783	23,490
Total	3,532	105,960
Butler County—		
Elbing	1,817	54,510
Potwin	448	13,440
South Augusta	1,093	32,790
North Augusta	1,369	41,070
Towanda	1,764	51,120
Cameron-Robinson	785	23,490
Sluss	211	6,330

(Continued on Next Page)

County—	Dly. av. (bbls.)	Month (bbls.)
Nuttle-Koogler	3,033	90,990
Wilson-Dunkle	1,475	44,250
Eldorado	6,516	195,480
Smock	203	6,090
Leon-Weaver	3,863	115,890
Fox-Bush	880	26,400
Douglass	92	2,760
Keighly	431	12,930
Benton	62	1,860
Blankenship	792	23,760
Total	24,772	743,160
Greenwood and Woodson Counties—		
Sallyards	946	28,380
Teeter	3,996	119,880
Virgil	5,536	166,080
Thrall-Burkett	1,152	34,560
Seeley	7,248	217,440
Polhamus	673	20,190
Miscellaneous	847	25,410
Total	20,398	611,940
Cowley County—		
Rainbow Bend	1,747	52,410
Slick	445	13,350
Graham	290	8,700
Rock	134	4,020
Clark	134	4,020
Eastman	343	10,790
Winfield-New Salem	1,906	57,180
Miscellaneous	822	24,660
Total	5,821	174,630
McPherson County—		
Ritz	4,492	134,760
Voshell	9,977	299,310
Miscellaneous	360	10,800
Total	14,829	444,870
Other Counties—		
Rooks	55	1,650
Sumner	9,090	272,700
Rice	497	14,910
Russell	3,693	110,790
Reno	40	1,200
Harvey	123	3,690
Coffey	171	5,130
Trego	17	510
Chautauqua	3,407	102,210
Elk	1,691	50,730
Wilson	154	4,620
Montgomery	1,147	34,410
Allen	472	14,160
Neosho	488	14,640
Lyon	633	18,999
Miami	1,371	41,130
Franklin	325	9,750
Douglass	13	390
Bourbon	60	1,800
Linn	142	4,260
Anderson	1,477	44,310
Labette	26	780
Chase	19	570
Woodson	972	29,160
Total September	113,517	3,405,510
Total August	112,630	3,491,530
Difference	889	86,020

NORTH TEXAS

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Archer County	14,652	439,560
Clay County	625	18,750
Wilbarger County	17,446	523,380
Montague County	6,325	189,750
Young County	14,122	423,660
Baylor County	910	27,300
Cooke County	3,250	97,500
Foard County	143	4,290
Total September	78,899	2,366,970
Total August	89,007	2,759,217
Difference	10,108	392,247

CENTRAL TEXAS

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Brown County	5,460	163,800
Callahan County	3,107	93,210
Coleman County	2,674	80,220
Comanche County	136	4,080
Eastland County	5,138	154,140
Erath County	261	7,830
Jack County	2,255	67,650
Jones County	1,385	41,550
Palo Pinto County	512	15,360
Runnels County	11	330
Shackelford County	5,674	170,220
Stephens County	5,365	160,950
Throckmorton County	758	22,740
Haskell County	6,678	200,340
Total September	39,414	1,182,420
Total August	35,580	1,102,980
Difference	3,834	79,440

TEXAS PANHANDLE

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Carson County	7,093	212,790
Hutchinson County	16,590	497,700
Wheeler County	599	17,970
Gray County	54,989	1,649,670
Moore County	329	9,870
Total September	79,600	2,388,000
Total August	97,267	3,015,277
Difference	17,667	627,277

SOUTHWEST TEXAS

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Branyon	22	651
Bruner	16,172	485,162
Buchanan	232	6,955
Chapman	9,203	276,082
Dale	375	11,258
Darst Creek	47,234	1,417,016
Kingsville	126	3,782
Larremore	30	900
Luling	9,818	294,544
Lytton Springs	765	22,944
Manford	303	9,099
McMullen	31	923
Medina	22	660
Mirando	12,084	362,527
Normanna	10	300
Mineral	3	100
Pettus	9,624	288,713
Saxet	76	2,281
Somerset	1,514	45,419
Yoast	327	9,820
Total September	107,971	3,239,136
Total August	110,434	3,423,468
Difference	2,463	184,332

WYOMING

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Big Muddy	1,826	54,780
Lander	589	17,670
Dutton Creek	151	4,530
Elk Basin	782	23,460
Ferris	14	420
Frannie	89	2,670
Grass Creek	1,962	58,860
Hamilton	917	27,510
LaBarge	1,877	56,310
Lance Creek	135	4,050
Lost Soldier	4,967	149,010
Oregon Basin	2,544	76,320
Osage	1,463	43,890
Poison Spider	1,318	39,540
Rock Creek	2,157	64,710
Salt Creek	28,926	867,780
Simpson Ridge	49	1,470
Byron	505	15,150
Warm Springs	102	3,060
Teapot	24	720
Pilot Butte	26	780
Total September	50,423	1,512,690
Total August	46,756	1,449,436
Difference	3,667	63,254

MONTANA

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Dry Creek	60	1,800
Cat Creek	1,116	33,480
Kevin-Sunburst	4,949	148,470
Pondera	1,753	52,590
Lake Basin	59	1,770
Border	544	16,320
Bannatyne	65	1,950
Total September	8,546	256,380
Total August	9,715	301,165
Difference	1,169	44,785

COLORADO

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Moffat	962	28,860
Fort Collins	1,183	35,490
Florence	513	15,390
Iles	1,046	31,380
Tow Creek	362	10,860
Miscellaneous	115	3,450
Total September	4,181	125,430
Total August	4,248	131,688
Difference	67	6,258

NEW MEXICO

Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Hogback	418	12,540
Rattlesnake	1,270	38,100
Table Mesa	90	2,700
Artesia	557	16,710
Getty	104	3,120
Hobbs	34,859	1,045,770
Jal	1,355	40,650
San Simon	659	19,770
Maljamar	247	7,410
Lea City	5,258	157,740
Total September	44,817	1,344,510
Total August	42,292	1,311,052
Difference	2,525	33,458

WEST TEXAS

Daily Average and Monthly Production in September

	(bbls.) Dly. av.	(bbls.) Month
Crane-Upton	33,602	1,008,060
Crockett	1,837	55,110
Ector	8,426	252,780
Fisher	874	26,220
Glasscock	4,844	145,320
Howard	18,394	551,820
Irion	93	2,790
Loving	2,007	60,210
Mitchell	2,162	64,860
Pecos	106,930	3,207,900
Reagan	21,899	656,970
Scurry	18	540
Ward	3,305	99,150
Winkler	69,766	2,092,980
Total September	274,157	8,224,710
Total August	278,929	8,646,806
Difference	4,772	422,096

(Continued on Next Page)

Longyear 2N Gas Diamond Core Drill

Here's an Ideal Drilling Outfit for quick moving and easy set-ups

THE Longyear 2N Gas Drill mounted on a steel truck has proven to be ideally adapted for core drilling oil structures where changes in location must be quickly made and laborious set-ups avoided. The machine is a complete drilling unit with nothing to be disconnected when moving, and has a capacity of 2,000 feet of 1⅛-inch core, or 1,000 feet of 2⅛-inch core. The drill is equipped with either 12-inch or 24-inch hydraulic swivel head. An additional brake installed on the motor end of the drill shaft prevents accidental dropping of the drill rods. As the brake and drill clutch are controlled by the same lever, the brake is applied simultaneously with the release of the clutch, an obvious advantage when hoisting a heavy string of rods or casing. Motive power is furnished by a 30 h. p. gas engine complete with clutch and three-speed transmission, cooling radiator, fan, fuel tank and sensitive control throttling governor which automatically increases the power under load.

The machine is equipped with a telescopic shaft so that the drill can be moved back from the drill hole when hoisting rods. A flexible coupling on the shaft takes care of any variation in the alignment of the drill and motor, thus relieving the bearings of all undue wear.

Proper drill speed is obtained through two machine-cut gears. All controls are within easy reach of the operator. A spool hoist driven by the main drill shaft is useful in sinking standpipe or surface conductor.

An adequate chain-driven pump, which can be operated independently of the drill, is mounted with the unit.

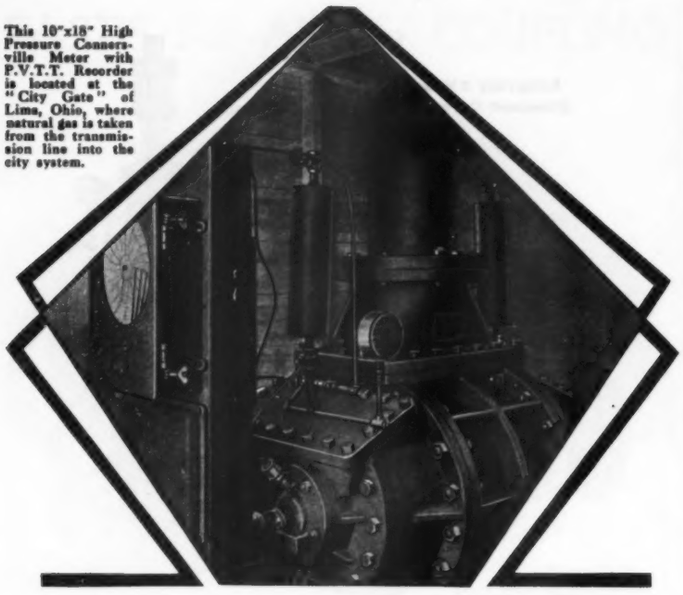
The sturdy truck is made of steel with wide-rimmed steel wheels and can be equipped with caterpillar tread for heavy ground, but is not automotive.

Our bulletin No. 18 will be mailed you upon request. Address E. J. Longyear Company, Minneapolis, Minnesota, or our Mid-Continent branch at Ponca City, Oklahoma.

E. J. LONGYEAR COMPANY

MINNEAPOLIS, MINNESOTA

Longyear



This 10"x18" High Pressure Connersville Meter with P.V.T.T. Recorder is located at the "City Gate" of Lima, Ohio, where natural gas is taken from the transmission line into the city system.

Metering

For Natural Gas

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The *Connersville Type Meter* is dependably accurate, since the displacement is a fixed, unchangeable volume. Pressure loss is low because the *Connersville Type Meter* operates on very small differential pressures.

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GULF COAST
SOUTHEAST TEXAS
Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Allen	35	1,057
Barbers Hill	18,035	541,054
Batson	1,116	33,468
Big Creek	3,474	104,213
Blue Ridge	2,019	60,558
Brenham	138	4,130
Boling	1,016	30,472
Clay Creek	2,197	65,920
Damon Mound	678	20,349
DeWalt	12,051	361,546
Fannett	679	20,383
Goose Creek	4,557	136,704
Hankamer	1,699	50,984
High Island	735	22,561
Hull	8,558	256,743
Humble	19,440	583,200
Jasper County	25	750
Lost Lake	631	18,918
Markham	332	9,948
Moss Bluff	67	2,016
Mykawa	40	1,212
Nash	286	8,595
North Dayton	1,041	31,221
Orange	2,181	65,424
Orchard	2,178	65,351
Pierce Junction	11,209	336,258
Port Neches	1,464	43,920
Raccoon Bend	12,045	361,346
Refugio	28,880	866,394
Esperson (Sheeks)	3,004	90,110
Saratoga	1,261	37,829
Sour Lake	2,194	65,814
South Liberty	3,279	98,358
Spindletop	16,291	488,728
West Columbia	4,133	124,009
Total September	167,018	5,010,543
Total August	172,392	5,344,156
Difference	5,374	333,613

EAST CENTRAL TEXAS
Daily Average and Monthly Production in September

	Dly. av. (bbls.)	Month (bbls.)
Boggy Creek	3,669	110,065
Cedar Creek	42	1,270
Currie	305	9,165
Hill County	32	960
Mexia	4,097	122,921
Minerva	545	16,350
Nigger Creek	149	4,470
Powell	5,362	160,859
Richland	123	3,695
Thrall	41	1,230
Van	25,968	779,042
Wortham	631	18,920
Total September	40,964	1,228,947
Total August	40,214	1,246,657
Difference	750	17,710

SOUTH LOUISIANA
Daily Average and Monthly Production in September

Anse La Butte	32	960
Bayou Blue	69	2,078
Bayou Boullion	146	4,381
Black Bayou	375	11,235
Edgerly	409	12,268
Jennings	2,790	83,683
Hackberry	3,598	107,951
Lake Barre	1,075	32,249
Lake Pelto	92	2,772
Lockport	2,579	77,368
Port Barre	3,296	98,870
Sorrento	71	2,140
Starks	707	21,204
Sulphur	2,946	88,385
Sweet Lake	1,173	35,184
Vinton	6,517	195,522
Welsh	116	3,486
White Castle	1,142	34,258
Total September	27,133	814,000
Total August	28,088	870,727
Difference	955	56,727
Ttl. Gulf Coast, Sept.	194,151	5,824,543
Ttl. Gulf Coast, Aug.	200,480	6,214,883
Difference	6,329	390,340

NORTH LOUISIANA
Daily Average and Monthly Production in September

Caddo, light	9,006	270,180
Caddo, heavy	2,646	79,380
Homer	3,459	103,770
Haynesville	4,778	143,340
DeSoto-Red River	3,029	90,870
Elm Grove	510	15,300
Bellevue	747	22,410
Cotton Valley	1,882	56,460
Urania	5,163	154,890
Pleasant Hill	518	15,540
Zwolle	4,382	131,460
Holly	1,036	31,080
Sarepta-Cartersville	2,646	79,380
Total September	39,802	1,194,060
Total August	41,303	1,280,393
Difference	1,501	86,333

ARKANSAS
Daily Average and Monthly Production in September

El Dorado	4,009	120,270
Smackover, light	4,967	149,010
Smackover, heavy	36,082	1,082,460
Stephens	917	27,510
Nevada County	1,012	30,360
Lisbon	908	27,240
Bradley	65	1,950
Champagnolle	3,756	112,680
Mount Holly	88	2,640
Urbana	972	29,160
Total September	52,776	1,583,280
Total August	54,842	1,700,102
Difference	2,066	116,822

DOMESTIC FURNACE OILS ARE FOUND SATISFACTORY

(Continued from Page 160)

the hot air, it burns and greatly increased pressures result, which, acting on the pistons, drive the engine, as in a gasoline engine.

Burning the fuel in a Diesel engine is also different from a gasoline engine. In a gasoline engine the fuel-air ratio is a constant value, being high or low depending upon the carburetor setting. It is desirable to have just enough air present to burn the gasoline. The speed or power output of a gasoline engine is controlled by the amount of fuel-air mixture admitted to the cylinder. With a Diesel engine a given amount of air is always drawn in, and then the desired amount of atomized liquid fuel is injected. Thus, the fuel-air ratio is constantly changing, depending upon the amount of fuel injected. The speed of these engines is controlled by the amount of fuel injected rather than the fuel-air mixture. Under these conditions, it is readily seen that under all conditions except wide open throttle there is excess air present which tends to burn the fuel completely.

Fuel Handling System

The fuel handling system on a Diesel engine is somewhat different from that on a gasoline engine. The Diesel fuel is carried in tanks the same as gasoline; and then flows to the circulating pump either by gravity, if the tanks are higher than the engine, or by a pump if the engines are above the tank. The pipe used on most installations is a regular three-eighths-inch outside diameter by 0.049 inch wall copper tube. This seems to be plenty large to allow present fuel oils to flow readily to the engine. It is perfectly permissible to use larger tubes, and this may be done when further study has been made of available fuel oils, and higher viscosity oils are used.

The circulating pump, which is a geared pump, draws the oil from the feed line and tank and forces it around the engine. This pump handles about 50 gallons per hour at 10 pounds pressure, which is five times the amount used in normal cruising speed.

This pump insures ample oil for the injecting pump on each cylinder.

The injector pumps, which are of the plunger type, work from a cam and deliver a given volume of oil to each cylinder. The volume delivered depends upon the length of stroke of the pump which, of course, is adjustable by opening or closing the throttle. Therefore, as stated above, the speed of the engine is controlled by the amount of fuel injected.

The volume of oil pumped must, of course, be constant for a given stroke, and at the same time the oil should be well atomized. This is accomplished by having the outlet orifice of the pump adjustable with the viscosity of the oil. This is done with a spring loaded plunger.

The fuel, after it enters the cylinder, must be completely burned. This factor greatly depends upon intimate mixture of fuel and air. This is done by good atomization of the fuel and a high degree of turbulence, which is accomplished by a rapid whirling motion of the incoming air. This is further explained in Woolson's paper, "The Packard Diesel Aircraft Engine."

The fuel, after it is burned, is exhausted as in a regular gasoline engine, and thus the cycle is completed.

Fuel Characteristics

A discussion of fuel characteristics will be considered from three angles: 1, the engine's requisites; 2, its nonrequisites; and, 3, the relation of fuel oil tests to engine operation.

Under this first division will be discussed the properties of the fuel as they affect: Flow from tanks to engine, starting ability, power output, wear on engine, storage, safety.

Under the second division, on nonrequisites, will be discussed: Vaporization, gumming, detonation.

Under the third division will be discussed: Gravity, flash and fire, viscos-

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Wild Mary Sudik No. 1, I.T.I.O.
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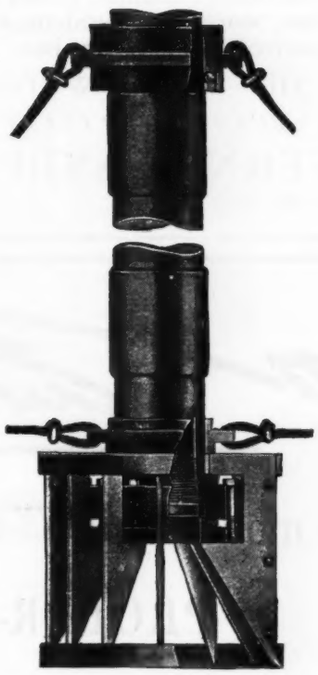
Wherever oil is found American Equipment is becoming more in demand for production purposes, when a fishing job is necessary, or when an emergency arises.

Complete information regarding our fishing and drilling tools will be gladly furnished upon request.



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ity, pour test, distillation, sulphur, water and sediment, ash, color.

The requisites of a fuel for an aircraft Diesel engine do not appear to offer difficulties to petroleum refiners, and it is the purpose of the engine to burn as cheap a fuel as can be safely handled and one which is readily available.

A study of available fuels was made just previous to completing designs on the engine, and it seemed that the oils sold as domestic furnace oils were suitable. The specifications laid down by the American Oil Burner Association do not necessarily give a satisfactory aircraft Diesel fuel because of pourpoint, but most oils sold on these specifications are satisfactory.

One of the most important requisites of a fuel oil is that it will flow from the fuel storage tanks to the circulating pump through a relatively small tube at the temperature at which the plane is operating; thus, for cold weather operation it is essential that the fuel have a sufficiently low pourpoint and viscosity at winter temperatures to flow properly. Motors operate at extremely low temperatures, even at —75° F.; but this is extreme and, of course, special fuel can be obtained. It has been our experience that the majority of domestic furnace oils have a pourpoint or freezing point around —30° F. to —50° F., and this is quite satisfactory for general commercial work.

Starting Ability

The engine starts, as previously stated, by heat produced in compressing air. Therefore, to start the engine it must produce a sufficiently high temperature to ignite the fuel spontaneously, or the fuel must have a sufficiently low spontaneous or autogenous ignition temperature to ignite by the heat produced in the engine.

The difference in autogenous ignition temperature of the various fuel oils we have used in our engine is apparently not sufficient to give any trouble with starting or operating the engine. The autogenous ignition temperature of the fuels we have been using is about 500° F., when taken by the A.S.T.M. tentative method of test for the determination of autogenous ignition temperature, D-286-28-T.

Carbon disulphide has an appreciably lower autogenous ignition temperature, 275° F., by the same method of test, and in actual operation of the engine will ignite in much colder weather, although it does not have sufficient B.t.u. content to operate the engine.

It is also of interest to point out that the autogenous ignition temperature is independent of flash or fire point, distillation range or other properties by which a gasoline might be judged.

Our engine is equipped with "glow plugs," which resemble spark plugs in appearance but do not have a gap. A resistance wire on the plug and in the cylinder is heated by an electric current. This helps to heat the air in starting in extremely cold weather. The plugs are only used when the engine is so cold that the heat of compression is carried away too fast for easy starting. It is not necessary to use them except in cold weather.

Power Output

The power output of any fuel depends upon its heat content and how completely it is burned in the engine. The heat content of petroleum products is roughly proportional to their specific gravity. Thus, with a low A.P.I. gravity fuel there are less heat units per pound than with a high A.P.I. gravity fuel; but, on the other hand, the heat units per gallon are higher. An airplane equipped with a Packard 225 horsepower Diesel engine at cruising speed would require, with a 30° A.P.I. fuel oil, approximately 70.3 pounds of fuel per hour, or 9.65 gallons per hour, and with a 40° A.P.I. fuel, 69.7 pounds or 10.12 gallons. A 10-hour flight with the low gravity fuel would thus require only six more pounds of fuel, but would use 4.7 gallons less. This difference is not appreciable.

The completeness of burning of a fuel in an engine is dependent on the design of engine and on the type of fuel. As has been described, the engine is designed to give excess air, to atomize the fuel finely, and to produce good turbulence for properly mixing the fuel and air. These are done sufficiently well to burn any distilled fuel, but we do not feel that it is advisable to use any undistilled fuels because of the residual matter which might not burn, causing heavy deposits.

It, therefore, is our belief that any distilled petroleum fuel having proper flowing ability is satisfactory from this standpoint.

The fuel for storage in a ship must, of course, be neutral, containing neither acid nor alkali. If either of these materials is present, it is apt to corrode the aluminum fuel tanks which are used and thus cause trouble by plugging the fuel lines or screens.

Fire Hazard Eliminated

One of the chief advantages of a Diesel aircraft engine is its elimination of fire hazard. To insure this advantage the fuel used must have a high flashpoint. Through our experiments and experience it is thought that, with a minimum open cup flashpoint of 150° F., no trouble will result, and for this reason it is hoped that no fuels will be marketed with a flashpoint below this figure.

Many people carry over the belief that because gasoline engines must have a fuel with certain vaporizing, antidetonating and similar characteristics, Diesel fuels must also have them. This is not true, and each will be discussed.

The Diesel engine operates by injecting liquid fuel in an atomized condition into heated air. It thus burns without being vaporized by cold air, as is the case with gasoline engines. Thus, it is not necessary to have a volatile fuel, a certain distillation range, or vapor pressure to operate properly. As far as our experience teaches, any fuel distilled with present equipment will operate satisfactorily, regardless of its distillation range; providing, of course, it is not a gasoline or low boiling material.

It might be pointed out here again that a distilled fuel is desirable because of freedom from residual matter.

Diesel fuels must, of course, be sufficiently free from gum-forming constituents so that the fuel tanks, fuel lines and screens will not become plugged. However, rather poorly refined oils burn satisfactorily and do not leave any injurious deposits that have yet been found.

Detonation Characteristics Different

Diesel engines do not exhibit the same detonation characteristics as high compression gasoline engines. Detonation, or preignition in gasoline engines, may be due to various reasons, but heat of compression and speed of burning are responsible for considerable trouble. The heat of compression is necessary in a Diesel engine, as it is purposely used to ignite the fuel.

The speed of burning is controlled by injecting fuel over a rather wide range, and, for this reason, crudes which give gasolines of high antiknock value appear to be of no advantage in a Diesel engine as now developed. Fuels produced from different crudes produce similar results in the engine.

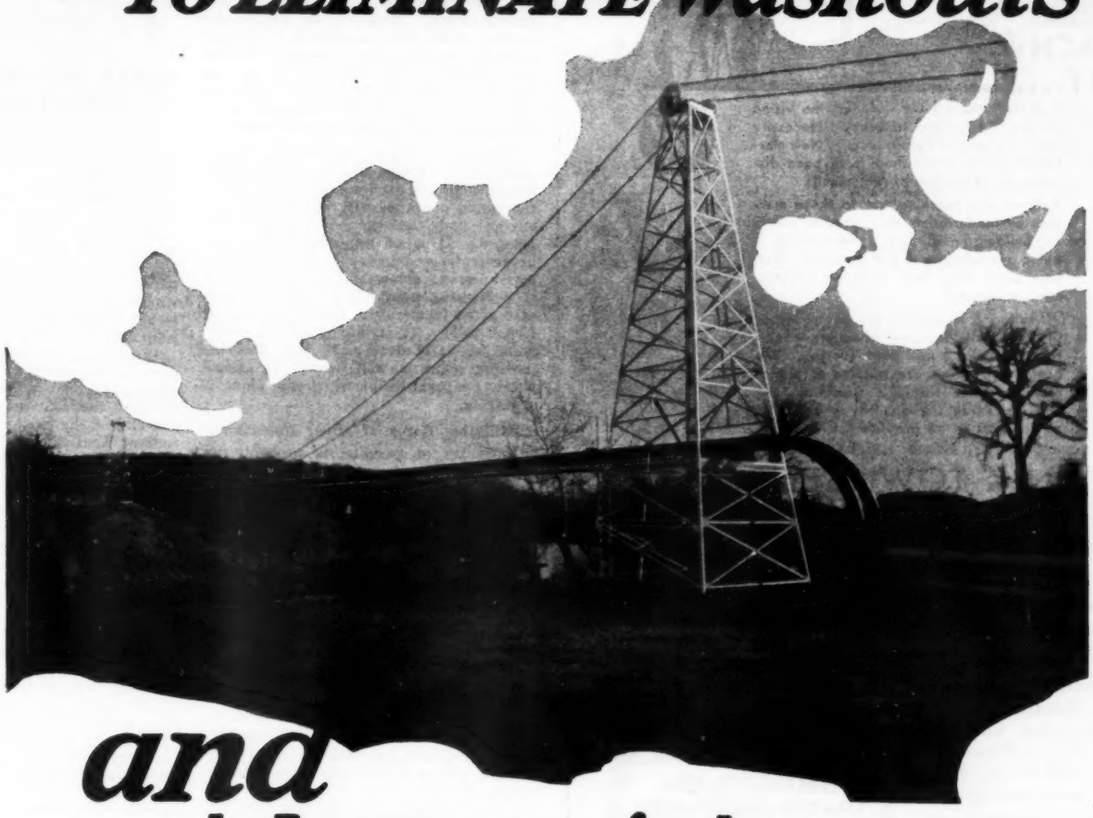
Recent tests indicate, however, that antiknock fuels may allow shorter injection periods and thus more power. Producers of Diesel fuel oils should work toward producing antiknock fuels if possible.

The above has pointed out in brief what is essential and what is nonessential in a Diesel fuel, but before leaving the subject it might be well to point out the relation of fuel oil to engine operation.

The term "gravity" is used to a great extent in describing fuel oil, but it actually has very little significance in a Diesel fuel other than that pointed out under power output. It is not essential to purchase or use fuel of a certain gravity except in so far as trade custom demands.

The flash or firepoint is one of the

Over the top!
– TO ELIMINATE washouts



and cut down maintenance

LET old Bird Creek overflow whenever it will! Its raging torrents can never harm the two pipe lines on this 340-foot span, four feet above high water mark. Two well designed 12-inch bends on the right bank convey natural gas from the underground lines to the suspension bridge level. These bends also serve as expansion units.

Cities Service Gas Company took this unusual means to insure uninterrupted service and freedom from high maintenance costs at their Tallant, Oklahoma crossing. While they were anxious to obtain a neat appearing job on account of the nearby highway, their first concern was a successful engineering venture.

For this reason they chose pipe with a high rating for strength, ductility, uniformity and particular fitness for constructions as unusual as this. They said, NATIONAL—

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IN a plant where melted lead is carried through a 2½-in. line from melting kettle to presses, the line, subjected to 750 deg. temperature, is of seamless steel piping with welded flanges. Copper gaskets failed because the copper alloyed with the hot lead. Aluminum gaskets were rendered useless by excessive expansion. Smooth-On Coated Corrugated Iron Gaskets have been adopted as standard and have proven absolutely tight.

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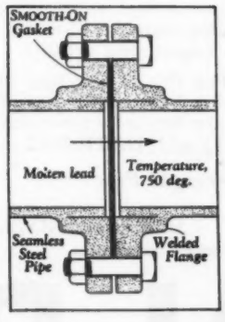
Made full-width to cover flange face, or narrow width to fit inside the bolt circle. Pipe sizes 2-in. to 26-in. for pressures up to 250 lbs.



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Do it with SMOOTH-ON

most important tests for aircraft Diesel engine fuel. This is true not from the engine operation standpoint, but from the elimination of fire hazard. The flashpoint should be over 150° F.

The viscosity of the fuel is important, and again not from the engine operation standpoint, but from the fact that it must be low enough at the operating temperature of the plane to flow through a small tube at a rate five times the need of the engine. This is approximately 50 gallons per hour with our present engine.

Our tests to date have not definitely determined what viscosity will give the desired flow with each engine installation. The gravity head on the circulating pump and the length of the oil tube are factors which must be taken into consideration. Most oils on the market coming under the classification of light domestic fuel oil have a Saybolt Universal viscosity at 10 below 0° F. of only 50, and at 100° F. of 32. Thus, the slope of the curve shows this viscosity to be satisfactory until freezing takes place.

The pour test for fuel oils is of great importance. A fuel that has a pourpoint higher than the air temperature at which the plane operates will not flow to the engine; and, thus, no power will be developed. It is of importance that this property be watched. The pourpoint on most present domestic fuel oils is more of a freezing point than pourpoint, and at a given temperature these fuels almost freeze solid. It is important that this point be watched to make sure that the freezing point is well below the atmospheric temperature at which the plane is operating.

Distillation Range of Minor Importance

Volatility of gasoline is probably its most important factor, and the distillation range is used as a test of this characteristic. In the Diesel engine this is of very minor importance, and any distilled fuel will function properly in this engine providing its other characteristics are correct.

Distillation range or volatility of Diesel fuels has no effect on starting, fuel distribution, acceleration, or other properties which are so vital to gasoline.

Sulphur in amounts up to 0.5 per cent has shown no deleterious effects on the engine, and is considered satisfactory.

Water and sediment are not desirable in any fuel, but the 0.05 per cent specified for domestic fuel oils is permissible in Diesel fuels.

Ash is important as an indication of grit or foreign matter in the oil that might cause wear in the engine. There should be no ash left after burning the oil.

The color of the oil has no meaning providing the oil meets all the other tests.

In closing, it might be of interest to list the properties of the fuels which have shown successful operation. These are not given as a specification, but simply to point out what has been used in the past.

Gravity at 60° F.	37° to 42° A.P.I.
Flashpoint	150° to 180° F. open cup
Color	White to 1½ N.P.A.
Viscosity—	
At 100° F.	32 to 35 Universal Saybolt
At 0° F.	45 to 50 Universal Saybolt
Distillation—	
Initial	348° to 430° F.
Endpoint	490° to 600° F.
Pourpoint	—30° to —80° F.
Ash	None
Acidity	None
Alkalinity	None

In summing up the above, the following points are essential in a Diesel aircraft fuel:

1. A distilled fuel.
2. A pourpoint and viscosity low enough to flow to the engine at temperatures encountered in service.
3. A flashpoint over 150° F.
4. No acidity, alkalinity or grit.

SHELL REFINERY STILLS HAVE LARGE CAPACITY

(Continued from Page 40)

crude then is pumped to the economizer and tube still.

The convection coil arrangement referred to at the plant as the "economizer" is partly responsible for the large capacity of the shell stills. To gain the large throughput on the shell stills, high furnace temperatures are necessary, and without the use of the economizer this would necessitate a substantial heat loss represented in high stack temperatures.

In the Associated battery the flue gases from each shell still pass to a common tunnel which conveys all the gases to the convection banks located at one end of the battery and adjoining the radiant heat furnace as shown in Figure 2. The convection bank, consisting of a total of 8,322 feet of 5½-inch (outside diameter) tubing, is arranged so that the flue gases can pass through the economizer in parallel. Before entering the convection banks the flue gases from the shell stills are joined with the gases from the tube still.

The crude charge from the surge tank passes in parallel through two banks of convection tubes and also the furnace tubes discharging into the evaporator. The operation from this point is the same as in the case of the shell still units.

This economizer and tube still account for one-third of the capacity of the entire battery with a relatively small investment and little additional operating cost. The flue gases from the shell stills at a temperature of 1,600° to 1,800° F. furnish most of the heat needed for processing after the crude comes from the surge tank. The temperature of the crude as it leaves the convection bank is around 530° F. After the oil leaves the convection banks, the tube still furnishes whatever additional heat is required to assure a discharge temperature of 600° F. to the vaporizer.

Shell Still Operation

To get this large capacity there must be some unusual features in the design

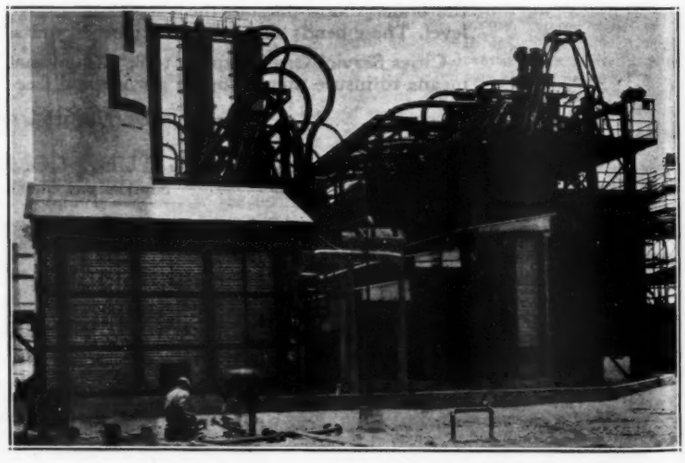

Figure 2—Tube still with convection bank to the rear which is also connected to battery of shell stills.

and operation of the shell stills. The most important feature is the recycling arrangement within each still which gives a heating efficiency comparable with pipe still operation.

As shown in Figure 3, oil is circulated by means of a centrifugal pump of the vertical type taking suction at the bottom of the still. This pump is driven by a 60 horsepower motor located on the top of each still.

The pump discharges into a series of headers as shown in the illustration with

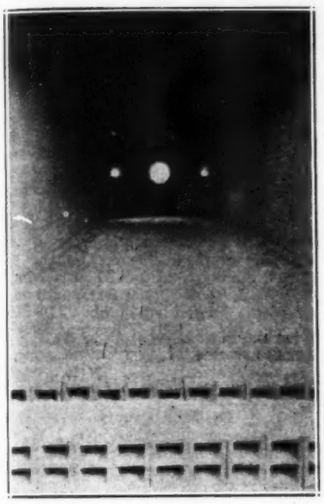

Figure 3—Inside view of shell still furnace showing firing end in background. Air circulation in floor of furnace shown in foreground. The air circulation also includes the sides of the furnace, the preheated air being returned to the frunace for combustion.

laterals along the bottom of the still. The crude is discharged from the laterals through approximately 300 nozzles.

This patented method of operation which was developed at the Avon refinery assures a rapid circulation of the oil in the heating zone of the still. No coking, overheating or other problems have developed, as is evidenced by the long runs previously mentioned.

Provision is made in pumping so that some of the hot crude at the base of the still can be sent to the (G 1) towers for the purpose of aiding the fractionation of the light-end products. In this operation the hot fuel serves the same purpose as superheated steam which is often injected in a column to assure uniform operation. The bulk of the crude oil charge as previously explained is discharged near the bottom of the tower.

Preheating Air

Another important contributing factor to the operating efficiency of the shell stills is the provision made to preheat the air used in combustion. The air by means of motor-driven blowers is first circulated around the base and sides of the furnace. This arrangement for the bottom of the furnace is shown in Figure 3.

The air thus is preheated to a temperature in excess of 350° F. This preheated air with a burner of special design does away with the use of steam in atomizing the oil used as fuel in the operation of the battery. High still settings shown in Figures 1 and 2, giving the necessary space for efficient combustion, are another feature of the still design.

Care in Operation

Those familiar with the design and operation of topping stills of large capacity will realize that the foregoing only covers the main features of the Avon installation. The success is largely dependent on operating detail.

There are numerous control instruments and so far as feasible these are operated automatically. In an operation of this type where so much stress is laid upon heat exchange and where the distillation is split among several units, it is imperative that all operating factors be kept in balance.

The corrosion problem has been solved by a close study of the crudes and the points in the processing where this important factor in maintenance was to be expected.

The entire battery is operated by a crew of three men for each shift.

RUSSIA GETS OIL CONTRACT

LONDON, England, Nov. 29.—Russian Oil Products, the organization which handles Soviet gasoline in Great Britain, has got a contract for the sale of 20,000,000 gallons of gasoline at a figure which none of the competing American and British companies could touch. The figure at which Russian gasoline will be supplied to a group of Midland omnibus companies is understood to be 19 cents a gallon, 2 cents a gallon under the lowest American or British price. The total money value of the contract approximates $4,000,000 and, according to the Daily Express, news of the huge deal was responsible for the recent disbandment of the Petroleum Export Association of Delaware, which dictated export prices, thus leaving the great groups which lead the oil world a free hand to fight Russian competition.

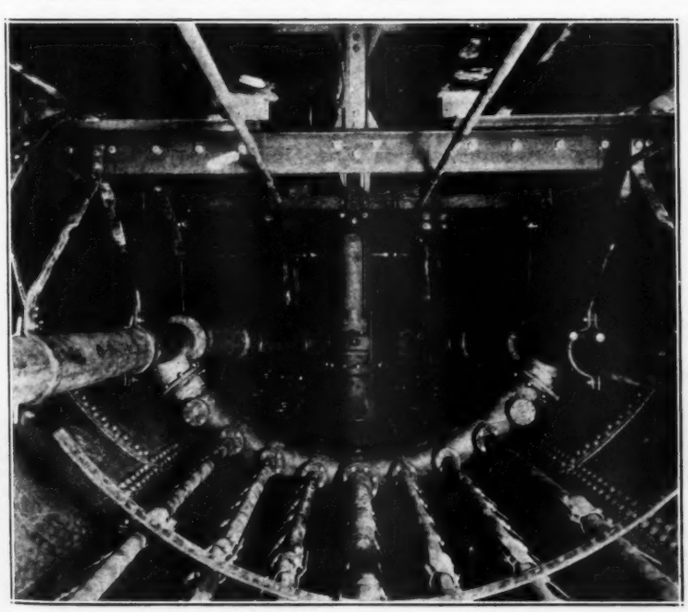

Figure 4—Inside view of shell still showing vertical centrifugal pump in center discharging into headers with lateral lines and nozzles extending entire length of still.

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Carson County

Continental Oil Co.'s No. 1 S. B. Burnett-M, 330 feet south and west of the NE cor. of the NE of Section 100, Block 4, I.&G.N.

Lone Star Gas Co.'s No. 1 J. C. McConnell, C SE SW, Section 65, Block 4, I.&G.N. Survey. Plains Holding Co.'s No. 2 J. C. McConnell, C S half NE, Section 46, Block 4, I.&G.N. Survey. Same company's No. 3 J. C. McConnell, C N half NW, Section 46, Block 4, I.&G.N. Survey.

Gray County

Warner Oil Co.'s No. 1 J. S. Morse, 330 feet north and east of the SW cor. of the N half of the NW of Section 68, Block 25, H.&G.N. Cree & Hoover's No. 1 G. Cole, 330 feet south and east of the NW cor. of the SW of Section 105, Block 3, I.&G.N. Gulf Production Co.'s No. 3 S. Faulkner-A (Tract A), 330 feet south and 2,310 feet east of the NW cor. of the Gulf Production Co.'s lease out of Section 33, Block B-2, H.&G.N.

Hutchinson County

Magnolia Petroleum Co.'s No. 1 W. E. Herring, 330 feet north and 2,970 feet west of the NE cor. of Section 7, H.&O.B., and located in the Nancy A. Williams Survey No. 52.

Huber Petroleum Co.'s No. 1 Johnson Brothers-A, 330 feet south and west NE cor. E half SE, Section 6, Block 1, B.&B. Survey. Same company's No. 1 Johnson Brothers (Premier), 330 feet south and west NE cor. of the W 60 acres of the N 80 acres of NW, Section 33, Block Y. Liner Drilling Co.'s No. 1 Johnson Brothers-D, 330 feet south and west of NE. cor. W half SW, Section 6, Block 1, B.&B. Survey.

Moore County

North American Oil & Gas Co.'s No. 1 L. Bivins, at the center of the south 160 acres of Section 93, Block 46, H.&T.C.

Gulf Production Co.'s No. 1 B. Dore, C SE, Section 312, Block 44, B.&T.C. Survey.

Wheeler County

Devore & Robinson's No. 1 T. J. Kelley, 2,310 feet north and west of the SE cor. of Section 33, Block A-4, H.&G.N.

NORTH CENTRAL AND WEST TEXAS

Andrews County

Deep Rock Oil Co. and others' No. 1 J. W. Kuykendall, 2,310 feet north and east of the SW corner of Section 24, Block 46-A, School Land

Archer County

P. Atchley's No. 1 H. C. Lemmon, 150 feet north and east of SW corner of Section 11, G. P. Meade Subdivision, 55 Pasture. Fain-McGaha Oil Corp.'s No. 1 Mrs. V. West, 1,000 feet north and 2,000 feet west of SE corner of Section 2,491, T.E.&L. Panhandle Refining Co. and others' No. 1 W. H. Terrell, 150 feet north and east of SW corner of Section 17, W. L. Herring Survey A-168.

Baylor County

A. R. Smith and others' No. 1 Upshur County School Land, 150 feet north and east of the SW cor. of Lot 50, J. F. Crittenden Subdivision, Upshur County School Land, A-557.

Brown County

R. C. McCarter and others' No. 1 G. Harris, 200 feet north and west of the SE cor. of the W half of the SE of the Mrs. J. M. Harris Survey No. 784. C. S. Wilmott and others' No. 21 Mrs. M. J. Suttles, 2,514 feet south and 530 feet east of the NW cor. of the Robert Mitchell Survey No. 140.

McGintey & Neal's No. 1 W. D. McChristy, 750 feet SW of the NE corner and 150 feet NW of SE line of W. D. McChristy tract out of Lot 77, Kerr County School Land No. 274.

Coleman County

Crabb & McNeal's No. 1 M. O. Henderson, 750 feet south and 1,100 feet east of the NW cor. of Lot 1, A. White Survey No. 161. W. L. Jackson and others' No. 1 O. Kellar, 1,070 feet south and 450 feet west of the NE cor. of the I. Harris Survey No. 164, A-381.

Barnsdall Oil Co.'s No. 2 F. Golson. 150 feet north and 550 feet east of the SW corner of their 82-acre lease out of the I. Harris Survey No. 164, A-381.

Callahan County

Meredith & Benton's No. 2 R. L. Berry, 150 feet north and 1,445 feet west of the SE cor. of Section 70, Bayland Orphan Asylum Land.

Beddingfield and others' No. 1 E. D. Henderson, 1,150 feet north and 750 feet west of the SE cor. W half, Section 69, Comal County School Land.

Cooke County

Big Indian Oil & Development Co.'s No. 2 B. W. Davis, 450 feet south and 1,750 feet east of the NW cor. of the B. W. Davis 87.6-acre tract out of Section 9, Fannin County School Land, A-1,248. Comail Oil Co.'s No. 1 E. Ball, 1,320 feet south and 1,714 feet east of the most northerly NW cor. of the J. Bradshaw Survey A-29.

Gose & Harvey and others' No. 2 C. Jacobs, 150 feet south and west of the NE corner of the S 40 acres of the W. Caldwell Survey A-208. A. L. Erlewine's No. 4 A. J. Dennis, 150 feet south and west of the NE corner of his 23.98-acre lease out of the H. Wilkerson Survey A-1,173. A. V. Grant and others' No. 3 A. J. Dennis-B, 1,939 feet south and 497 feet west of NE cor. of H. Wilkerson Survey A-1,173.

Eastland County

W. E. Horner and others' No. 1 W. O. Dooley, 150 feet south and 450 feet west of the NE cor. of the SW of Section 5, Block 4, H.&T.C.

Mook-Texas Oil Co.'s No. 12 Mrs. M. Sibley, 750 feet north and 299 feet east of the SW cor. of Lot 6, W. VanNorman Survey.

Ector County

Southern Crude Oil Purchasing Co.'s No. 2 J. M. Cowden & Co., 660 feet south and west of the NE corner of Section 34, Block 43, T-1-N, T.&P.

Foard County

The Texas Company's No. 1 L. K. Johnson, 3,550 feet south and 195 feet west of the NE corner of Section 36, Block L, S.P.R.R.

Jones County

Union Oil Co. and others' No. 1 Mrs. W. R. Hedrick, 200 feet south and east of the NW cor. of the Mrs. W. R. Hedrick 91.4-acre tract out of the G. Martinez Survey No. 195, A-262.

S. C. Yingling and others' No. 1 L. R. Cade, 330 feet north and west of SE cor. NW, Section 17, Block 19, T.&P.

Kimble County

Kamon & Mudge Oil Co.'s No. 1 Mrs. P. T. Hodges, 600 feet east of the NE cor. of the W. Randell Survey No. 28 and located in the George Kimble Survey No. 27, A-359.

Loving County

Lockhart & Co.'s No. 4 R. L. Allen, 440 feet SW of the NE line and 440 feet NW of the SE line of Section 82, Block 33, H.&T.C.

Montague County

J. H. Howell and others' No. 1 Mrs. L. Cunningham, 200 feet north and 758 feet west of the SE cor. of the south 50 acres of the east 85.3 acres of the south 125.3 acres of the Mrs. L. Cunningham 313.3-acre tract out of the T. R. Edmondson Survey A-222.

Palo Pinto County

Brazos River Oil & Gas Co.'s No. 1 F. E. Harrison, 1,800 feet southwest of the northeast line and 300 feet northwest of the southeast line of the F. E. Harrison 612-acre tract out of the R. Clark Survey A-135.

Pecos County

Southern Crude Oil Purchasing Co.'s No. 1 Scharff & Blackman, 4,550 feet northeast of the northeast line of Section 37 and 330 feet northwest of the northwest line of Section 35 and located in Section 38, Block 3, H.&T.C.

Shackelford County

R. F. Gillman and others' No. 1 J. E. Frasier, 150 feet southwest of the northeast line and 150 feet northwest of the southeast line of the southwest 80 acres of the northwest 160 acres of Section 523, T.E.&L. G. P. Mitcham and others' No.

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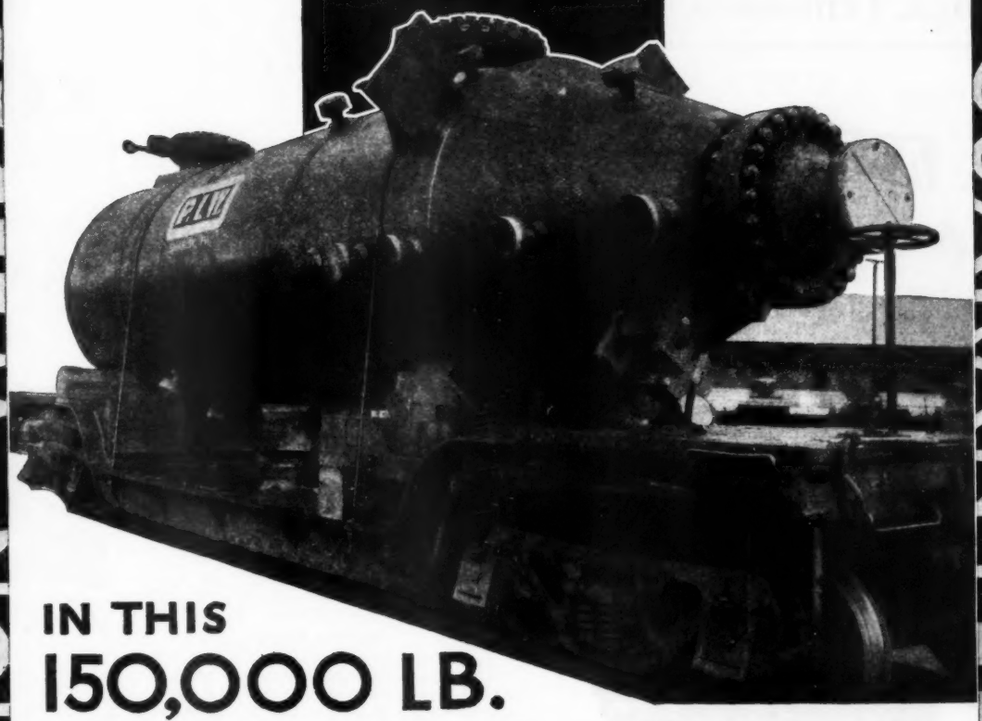

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4 J. H. Nail, 1,470 feet north and 150 feet east of the SW cor. of Section 69, Block 10, E.T.R.R.

Stephens County

R. Outlaw and others' No. 1 B. F. Langford, 300 feet south and 2,750 feet east of the NW cor. of Section 56, Block 6, T.&P.

Throckmorton County

Moore & Edwards' No. 1 Mrs. R. L. Parrott, 917 feet south and 210 feet east of the NW cor. of the east 60 acres of the west 100 acres of the south 170 acres of Section 962, T.E.&L. Woodley Petroleum Co.'s No. 1 E. J. Shaw, 450 feet south and 150 feet west of the NE cor. of the NW of Section 257, B.B.B.&C.

States Oil Corp.'s No. 1 J. B. Davidson, 650 feet south and 530 feet west of the NE corner of Section 1,685, T.E.&L. T. Knox and others' No. 1 Reynolds Cattle Co., 100 feet north and 300 feet west of the SE corner of Section 72, Comanche Indian Reserve. T. Knox and others' No. 2 Reynolds Cattle Co., at the SE corner of Section 72, Comanche Indian Reserve. T. Knox and others' No. 3 Reynolds Cattle Co., 300 feet north and 100 feet west of the SE corner of Section 72, Comanche Indian Reserve.

Upton County

R. H. Gill and others' No. 1 J. H. Shirk, 330 feet south and west of the NE cor. of Section 13, Block 3, M.K.&T.

Gulf Production Co.'s No. 1 J. H. Shirk, 2,310 feet south and 1,650 feet east of the NW cor. of Section 1, Block 3, M.K.&T.

Ward County

Black & Massey's No. 1 E. R. Allen, 2,108 feet southeast of the northwest line and 2,100 feet northeast of the southwest line of Section 11, Block 5, H.&T.C. The California Co.'s No. 1 N. B. Gordon, 330 feet southwest of the northeast line and 330 feet northwest of the southeast line of Section 6, Block 34, H.&T.C. J. D. Kugle and others' No. 1 Charles Wallace, 330 feet northwest of the northwest line of the J. W. Jackson Survey No. 55 and 1,263 feet northeast of the NE line of the Joseph Howe Survey No. 2 and located in Section 19, Block 34, H.&T.C.

Empire Gas & Fuel Co.'s No. 1 John Sealey estate, 330 feet south and 1,650 feet west of the NE corner of Section 5, Block F, G.&M.M.B.&A.

Wichita County

F. W. Boardman and others' No. 1 J. L. Powell, 4,000 feet south and 160 feet west of the NW cor. of the J. A. Scott Survey No. 17, A-298, and located in the L. P. Dikes Survey A-580. Bridwell Oil Co.'s No. 1 J. L. and T. J. Waggoner, 150 feet south and west of the NE cor. of Lot 4, H. George Survey A-454. C. W. Clark and others' No. 1 Allen & Kemp-B, 750 feet north and 150 feet east of the SW cor. of Block 44, Kemp Wichita Valley Land.

Walton & Blair's No. 5 W. B. Honaker, 450 feet south and 750 feet east of the NW corner of Section 1, C.&M., A-379.

Young County

Smith & Shamblin's No. 1 D. Bullock, 150 feet north and west of the SE cor. of the W half of the NW of Section 419, T.E.&L. Nash & Windfohr's No. 2 E. S. Graham, 250 feet south and 4,000 feet west of the SE cor. of the A. Hines Survey No. 5, A-135, and located in Fraction "D," Section 3,410, T.E.&L. Belknap Coal Co.'s No. 2 Belknap Coal Co., 174 feet north and 1,016 feet east of the SW cor. of the south 53.8 acres of the north 133.8 acres of the Belknap Coal Co. 213.8-acre tract out of Section 22, T.E.&L. Belknap Coal Co.'s No. 3 Belknap Coal Co., 159 feet south and 1,420 feet east of the NW cor. of the south 53.8 acres of the north 133.8 acres of the Belknap Coal Co. 213.8-acre tract out of Section 22, T.E.&L. F. E. Butler's No. 2 W. T. Finch and others, 150 feet south and 455 feet west of the NE cor. of the S half of the NE of Section 31, T.E.&L. F. E. Butler's No. 3 W. T. Finch and others, 150 feet north and west of the SE cor. of the SE of Section 31, T.E.&L. R. L. Crawford's No. 1 L. D. Garrett, 900 feet north and 150 feet west of the SE cor. of the SW of Section 305, T.E.&L. Glover & Wall's No. 6 C. W. Johnson,

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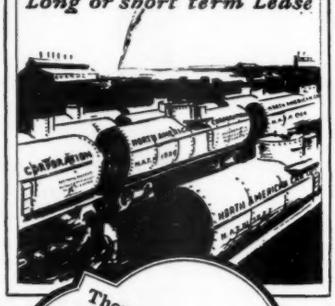

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750 feet north and west of the SE cor. of Lot 11, Richardson Brothers Subdivision, Edward W. Sergeant Survey A-253. Glover & Wall's No. 7 C. W. Johnson, 150 feet south and 450 feet east of the NW cor. of Lot 11, Richardson Brothers Subdivision, Edward W. Sergeant Survey A-253. W. H. Hammon's No. 1 S. R. Jeffery-A, 150 feet east of the middle of the west line of the S half of the NW of Section 41, T.E.&L. McDonald & Campbell's No. 1 S. R. Jeffery, 150 feet north and west of the SE cor. of the NW of Section 44, T.E.&L. E. R. Perkins and others' No. 1 Charles H. Sanford, 150 feet north and west of the SE cor. of the SE of Section 215, T.E.&L. Petroleum Production Co.'s No. 5 J. and C. Graham, 450 feet north and 150 feet east of the SW cor. of the south 48 acres of the north 88 acres of the J. and C. Graham 200-acre tract out of Section 2,249, T.E.&L. R. Seitz' No. 3 W. Finch and others, 150 feet north and east of the SW cor. of the east 20 acres of the N half of the NE of Section 31, T.E.&L. Willis & Terrell's No. 4 Belknap Coal Co., 200 feet south and 750 feet west of the NE cor. of Section 2,250, T.E.&L. Wooten & Reed's No. 5 M. E. McBrayer and others, 900 feet north and 575 feet west of the SE cor. of Section 1,907, T.E.&L.

George Alexander and others' No. 2 S. R. Jeffery-A, 150 feet north and east of the SW cor. NE, Section 41, T.E.&L. Belknap Coal Co.'s No. 1 Belknap Coal Co., 150 feet north and 1,400 feet east of the SW corner of the N 53.8 acres of the S 133.8 acres of the Belknap Coal Co. 213.8-acre tract out of Section 22, T.E.&L. W. F. Brazelton and others' No. 1 J. McComas, 150 feet north and east of the SW corner of Section 622, T.E.&L. G. B. Chandler's No. 1 J. S. Fisher, 150 feet south and west of the NE corner of the S 40 acres of the E 80 acres of Section 623, T.E.&L. F. H. E. Oil Co.'s No. 1 W. T. Finch and others, 150 feet south and west of the NE corner of the S 80 acres of Section 31, T.E.&L. A. C. Hill and others' No. 1 S. M. J. Benson, 150 feet north and west of the SE corner of the E half of the SE of Section 1,477, T.E.&L. Martin & Maer's No. 1 W. R. Smedley, 150 feet north and 200 feet east of the SW corner of the E 51 acres of the W R. Smedley 91-acre tract out of Section 26, T.E.&L. Perkins-Cullum & Anderson's No. 1 A. A. Barnheart, 150 feet south and east of the NW corner of the W 20 acres of the W. M. McCarty Survey, A-1,488. Petroleum Products Co.'s No. 4 J. & C. Graham, 150 feet south and 450 feet west of the NE corner of the S 48 acres of the N 88 acres of the J. & C. Graham 200-acre tract out of Section 2,249, T.E.&L. R. Seitz' No. 2 W. Finch and others, 738 feet south and 459 feet west of the NE corner of the E 20 acres of the N 40 acres of the NE of Section 31, T.E.&L. H. R. Stastny and others' No. 1 E. M. Eichelberger, 1,470 feet north and 1,550 feet west of the SE corner of Section 1,449, T.E.&L. J. F. Stover's No. 1 C. W. Johnson, 150 feet north and 530 feet east of the SW corner of Lot 10, Richardson Brothers Subdivision, Edward W. Sergeant Survey A-253. V. Swanson's No. 1 R. P. Owens, 500 feet south and 150 feet east of the NW corner of the SW of Section 790, T.E.&. The Texas Company's No. 1 W. Finch and others-B, 2,059 feet south and 150 feet east of NW cor. E half. Section 40, T.E.&L. The Texas Company and McKanna's No. 2 W. T. Finch and others-A, 150 feet north and 167 feet west of SE cor. NW, Section 40, T.E.&L. J. F. West's No. 1 M. E. McBrayer and others, 150 feet north and 750 feet west of the SE corner of the E 40 acres of the N 100 acres of Section 1,907, T.E.&L. E. D. Willis and others' No. 3 Belknap Coal Co., 150 feet north and west of the SE corner of the W 40 acres of the N 80 acres of the Belknap Coal Co. 213.8-acre tract out of Section 22, T.E.&L. Wootten & Reed's No. 4 M. E. McBrayer and others, 1,350 feet north and 150 feet west of the SE corner of Section 1,907 T.E.&L. A. P. Bisse's No. 1 Mrs. L. J. Woolfork, 925 feet south and 1,200 feet west of the NE corner of Section 12, T.E.&L. Martin & Maer's No. 1 R. E.

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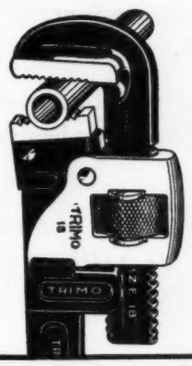

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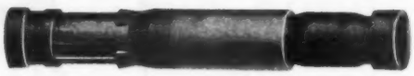

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Foster, 150 feet south and east of NW cor. E half SE, Section 731, T.E.&L.

F. Ard, Jr.'s No. 1 S. R. Jeffery, 150 feet south and 450 feet east of the NW cor. of the S half of Section 45, T.E.&L. Baker & Pardue's No. 2 Sally Donnell, 150 feet south and 500 feet east of the NW cor. of the G. Bellah Survey, A-1,573. P. F. Gwynn's No. 2 S. R. Jeffery, 450 feet north and 150 feet east of the SW cor. of the east 60 acres of the N half of Section 42, T.E.&L. Hightower and others' No. 1 R. T. Wells, 150 feet south and west of the NE cor. of Section 729, T.E.&L. E. R. Riggs' No. 16 B. H. Larimore and others, 1,350 feet south and 150 feet west of the NE cor. of the W half of the SW of Section 2,247, T. E.&L. Swink & Smith's No. 1 Belknap Coal Co., 150 feet north and east of the SW cor. of the east 40 acres of the north 80 acres of the Belknap Coal Co. 208.6-acre tract out of Section 22, T.E.&L. Terrell-Willis & Fain's No. 1 I. Gathright, 150 feet north and west of the SE cor. of the S half of the SW of Section 275, T.E.&L. The Texas Company and McKanna's No. 3 S. R. Jeffery-B, 450 feet north and 150 feet west of the SE cor. of the west 100 acres of the N half of Section 42, T.E.&L. J. R. Watson and others' No. 1 A. C. Watson, 1,701 feet north and 1,314 feet east of the SW cor. of Section 249, T.E.&L.

PANHANDLE, NORTH CENTRAL AND WEST TEXAS

Corrections

In Archer County: P. F. Gwynn and others' No. 1 Falls County School Land, 150 feet south and 750 feet east of the NW cor. of Section 20, Falls County School Land, A-130.

In Cooke County: Gose & Harvey and others' No. 1 C. Jacobs, 235 feet south and 284 feet west of NE cor. of C. Jacobs 138-acre tract out of the W. Calwell Survey A-208. Walker Petroleum Co.'s No. 1 Mrs. J. G. Jones, 200 feet south and 150 feet east of the SE cor. of the A. G. Harris Survey A-1,652 and located in the J. J. Arocha Survey A-20.

In Pecos County: Crosby Production & Royalty Co.'s No. 4 Mrs. M. A. Smith, 850 feet north and 330 feet east of the SW cor. of their lease out of Section 24, Block 194, G.C.&S.F.

In Terrell County: Milham Corp.'s No. 1 R. M. Bassett and others, 150 feet south and 2,640 feet east of the NW cor. of Section 76, Block Y, J. Bass Survey.

In Brown County: Rector Oil Co.'s No. 1 J. A. Baker, 875 feet north and 515 feet east of the SW cor. of Section 11, A. White Survey No. 161.

LEGRANDE POOL GEOLOGY

A report on the geology and oil producing possibilities of Kentucky's newest oil-producing area — the Legrande Pool in southeastern Hart County—has been written and will be issued by the Kentucky Geological Survey. The report is the latest of a large number of geological and mineral resource treaties which have come from the pen of state geologist, Dr. Willard Rouse Jillson. Up to the present more than 35,000 bbls. of oil have been produced from the Legrande section since the No. 1 Louis McKinney, the discovery well, was brought in by Davis and Norris on September 18, 1930. Doctor Jillson's report outlines the geological conditions surrounding the accumulation of oil in the Coniferous "sand" in the Legrande Pool and predicts extensions of this territory in parts of Hart, Barren, Green and other adjacent counties. Detailed subsurface structural and farm maps for the Legrande Pool are a part of the report.

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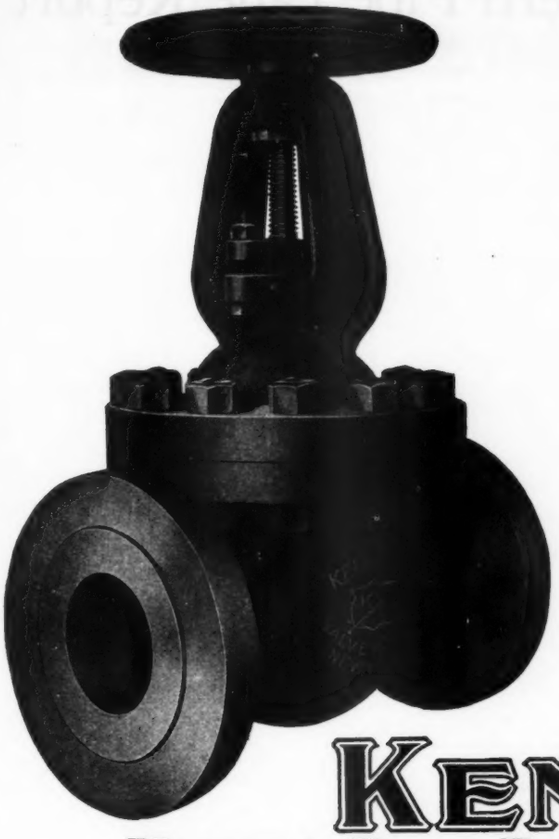

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Runs for the Month of September 1930

	Month bbls.	Daily average bbls.
Prairie P. L. Co.*	3,096,000	103,200
Gulf P. L. Co.	1,253,047	41,768
Texas P. L. Co.	597,863	19,929
Magnolia P. L. Co.	1,385,171	46,172
Empire P. L. Co.	1,821,332	60,711
Cosden P. L. Co.	832,711	27,757
Stanolind P. L. Co.*	2,835,000	94,500
Oklahoma P. L. Co.	2,206,399	73,547
Other lines*	5,880,000	196,000
Total September	19,907,520	663,584
Total August	20,759,207	669,651
Difference	851,687	6,067

Shipments

Prairie P. L. Co.†	4,246,592	141,553
Gulf P. L. Co.	1,208,894	40,296
Texas P. L. Co.	1,292,472	43,032
Magnolia P. L. Co.	1,535,669	51,189
Empire P. L. Co.	2,164,408	72,147
Cosden P. L. Co.	989,219	32,974
Stanolind P. L. Co.†	3,264,938	108,831
Oklahoma P. L. Co.	2,515,373	83,846
Other lines*	5,010,000	167,000
Total September	22,227,564	740,918
Total August	23,829,713	768,701
Difference	1,602,148	27,783

Stocks

Prairie O. & G. Co.*	27,050,000
Gulf P. L.-Gypsy Oil Co.	8,108,868
The Texas Company	4,130,059
Magnolia Petroleum Co.	5,821,224
Empire P. L. Co.	5,396,159
Mid-Continent Petroleum Corp.	3,705,319
Stanolind Crude Oil Pur. Co.*	20,300,000
Oklahoma P. L. Co.*	2,840,663
Carter Oil Co.	9,719,214
Other lines*	23,822,500
Total September	120,894,006
Total August	122,274,011
Difference	1,380,005

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF OCTOBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for September and October:

	Sept., 1930	Oct., 1930
Nat. Transit	126,408.01	135,934.22
S. W. Pa. P. L.	76,584.80	82,961.29
Eureka P. L.	286,627.14	329,128.04
Buckeye P. L. (Macksburg)	335,374.02	354,552.33
Buckeye P. L. (Cleveland)	11,061.63	12,508.84
Buckeye P. L. (Lima, etc.)	93,802.50	94,154.99
Indiana P. L.	5,054.52	4,483.25
Cumberland P. L.	179,527.92	172,782.21
N. Y. Transit	39,582.19	35,614.60
Tide Water P. L.	25,675.10	27,863.60
Pure Oil	191,912.84	189,443.04
Stoll Oil Ref.	3,317.59	19,496.16
Bradford Tran.	322,922.66	344,649.24
Total	1,697,851.92	1,803,576.80
Daily average	56,595.07	58,179.89

Note—Indian Refining Co. had other receipts of 307,070.32 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., 1930	Oct., 1930
Nat. Transit	484,508.49	479,245.86
S. W. Pa. P. L.	256,281.87	187,406.27
Eureka P. L.	244,918.35	247,221.25
Buckeye P. L. (Macksburg)	216,745.14	217,217.64
Buckeye P. L. (Cleveland)	1,712.02	2,200.10
Buckeye P. L. (Lima, etc.)	1,075,693.59	1,029,180.06
Indiana P. L.	1,128,187.89	548,201.97
Cumberland P. L.	136,895.24	126,573.84
Southern P. L.	66,892.64	69,576.30
N. Y. Transit	154,725.36	169,187.25
Northern P. L.	124,793.90	80,085.21
Tide Water P. L.	585,647.20	574,109.31
Pure Oil	183,063.50	274,485.43
Indian Ref.	373,510.38	334,226.70
Bradford Tran.	425,829.96	263,300.96
Tuscarora Oil	360,569.02	285,731.75
Total	5,819,974.55	4,887,939.93
Daily average	193,999.15	157,675.48

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of September and October:

	Sept., 1930	Oct., 1930
Nat. Transit	765,612.70	830,161.58
S. W. Pa. P. L.	542,827.03	543,474.82
Eureka P. L.	1,516,135.69	1,483,216.69
Buckeye P. L. (Macksburg)	665,285.49	656,581.88
Buckeye P. L. (Cleveland)	66,500.27	65,770.92
Buckeye P. L. (Lima, etc.)	5,065,078.07	4,992,794.24
Indiana P. L.	759,036.08	795,428.98
Cumberland P. L.	548,890.67	521,527.42
Southern P. L.	294,744.69	265,170.20
N. Y. Transit	139,813.32	178,747.41
Northern P. L.	480,715.71	459,246.38
Tide Water P. L.	957,099.18	811,218.64
Pure Oil	520,059.95	433,436.65
Indian Ref.	88,060.52	61,037.68
Tuscarora	276,805.35	104,667.41
Brad Trans.	125,354.27	235,074.97
Total	12,812,018.99	12,437,565.87
Decrease	235,032.85	374,463.12

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October showing gross stocks of the above fields:

	Sept., 1930	Oct., 1930
Pennsylvania	3,921,022.36	3,961,667.74
Lima	828,284.49	845,272.27
Kentucky	596,275.33	594,637.03
Mid-Continent	6,946,872.38	6,611,577.52
Illinois	10,632.05	3,102.03
Michigan	508,932.40	421,299.28
Total	12,812,018.99	12,437,555.87

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
January	56,209	52,904	51,749	75,907
February	61,298	57,002	51,833	79,256
March	63,247	57,485	54,252	76,688
April	60,927	56,812	58,444	84,536
May	60,284	62,067	59,902	80,548
June	62,757	58,230	52,833	75,430
July	58,674	57,144	56,087	68,921
August	60,870	57,745	56,087	54,291
September	60,285	53,487	57,315	56,595
October	147,050	58,100	76,093	58,179
November	57,275	53,865	74,531	.....
December	53,089	52,025	74,561	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1927	1928	1929	1930
January	141,227	146,465	165,721	217,623
February	138,534	167,368	159,387	224,355
March	133,777	158,883	161,474	228,846
April	140,227	172,935	169,737	241,845
May	144,594	180,559	184,281	248,383
June	149,772	188,024	185,404	234,401
July	151,850	189,470	194,763	207,094
August	188,653	192,853	184,946	205,506
September	144,213	194,138	201,214	193,999
October	147,036	176,000	191,367	157,675
November	150,975	176,898	202,743	.....
December	144,504	173,572	186,257	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
January	12,276,710	7,596,564	12,220,045
February	12,180,419	8,738,835	12,991,561
March	12,239,725	9,002,058	13,247,217
April	11,740,125	8,978,172	13,233,961
May	11,602,468	8,903,560	13,052,953
June	11,287,678	8,921,275	13,396,855
July	10,819,331	9,211,595	13,268,562
August	10,236,743	9,440,643	13,047,051
September	9,660,910	9,443,067	12,812,018
October	9,229,709	9,441,101	12,437,555
November	8,366,553	9,868,538	.....
December	7,539,555	11,253,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, October 31	1,991,058.93
Runs from wells	450,578.53
Other receipts	210,504.03
Regular deliveries	292,825.13
Other deliveries	296,877.49

The amount of Illinois oil run by the Tidewater Pipe Co. in October was 27,863.60 bbls. Deliveries were 27,863.60 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1930— October	478,442.12	320,688.73
1929— February	517,320.17	503,387.70
March	728,319.67	586,049.60
April	615,374.37	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44
August	625,351.99	746,425.06
September	582,457.66	669,947.73
October	622,302.83	558,558.63
November	565,108.75	427,064.63
December	548,924.41	489,368.81
1930— January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	530,074.22	509,304.60
May	605,147.37	504,069.84
June	572,662.57	468,658.83
July	604,529.54	388,454.47
August	594,642.12	375,742.43
September	457,001.11	371,691.63

Tide Water Pipe Co., Ltd., also delivered in October, 321,108.94 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	.....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,290
January	18,484	1,936	34,257	22,323	9,516	86,516	.....	.....	.....	.....	2,258	88,774
February	7,678	.....	24,714	14,321	5,000	51,714	.....	.....	.....	.....	2,607	54,321
March	10,548	3,065	28,871	8,774	22,484	73,742	.....	.....	.....	.....	805	74,548
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	3,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838
June	3,300	.....	33,933	20,767	2,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	43,419	23,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,418	3,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710
September	5,300	6,400	25,500	13,400	9,567	61,267	.....	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	12,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,775	233,678	5,548	16,484	6,613	1,774	30,419	264,097
January	21,161	10,678	134,581	38,677	43,806	248,903	4,322	6,453	.....	548	11,323	260,226
February	24,500	14,714	147,357	36,036	39,786	262,933	2,821	11,072	3,500	1,964	19,357	281,750
March	28,355	3,839	151,806	36,645	34,903	255,548	4,323	11,645	839	2,419	19,226	274,774
April	21,400	8,933	123,500	40,433	19,434	223,700	.....	7,400	2,433	4,167	14,000	237,700
May	24,129	9,322	174,194	39,291	28,226	275,161	8,194	11,548	2,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,633
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	8,548	3,000	29,290	276,871
September	38,867	8,533	150,933	34,500	25,567	258,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
October:	Month	26,895,160	20,821,646	26,412,167	3,429,468	2,000,027	1,956,326	2,392,952	4,482,000	88,389,746
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,253
November:	Month	21,317,540	19,193,760	24,896,034	3,430,560	1,911,060	1,853,565	2,360,110	4,029,000	78,981,629
	Daily average	710,585	639,792	829,868	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,876	25,609,823	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	818,394	114,486	61,841	60,592	76,724	134,455	2,622,565
January:	Month	21,983,242	20,302,984	25,284,352	3,273,197	1,817,685	1,780,969	2,161,090	4,216,000	81,305,519
	Daily average	709,137	671,064	815,624	105,587	58,625	57,451	69,390	136,000	2,622,888
February:	Month	20,885,660	17,977,624	23,314,627	2,965,704	1,608,376	1,738,425	2,027,984	3,780,000	74,298,419
	Daily average	745,916	642,058	832,668	105,918	57,442	62,087	72,429	135,000	2,653,517
March:	Month	19,699,979	19,112,306	25,503,880	3,504,395	1,817,871	1,943,093	2,337,028	4,231,500	78,149,253
	Daily average	635,483	616,526	822,679	113,045	58,641	62,680	75,388	136,500	2,520,943
April:	Month	18,768,743	19,541,310	24,799,768	3,734,253	1,724,460	1,909,552	2,334,810	4,134,000	76,946,896
	Daily average	625,625	651,377	826,658	124,475	57,482	63,652	77,827	137,800	2,564,897
May:	Month	19,044,444	20,587,503	26,214,068	3,978,385	1,659,895	1,914,290	2,565,219	4,402,000	80,365,804
	Daily average	614,337	664,113	845,615	128,335	53,545	61,751	82,749	142,000	2,592,445
June:	Month	18,020,795	19,754,900	25,643,705	3,765,060	1,704,060	1,923,621	2,519,190	3,880,000	77,211,331
	Daily average	600,693	658,490	854,791	125,503	56,802	64,187	83,973	129,300	2,573,711
July:	Month	18,802,024	18,032,514	25,910,929	3,541,409	1,713,680	2,079,769	3,275,894	3,844,000	77,200,219
	Daily average	606,517	581,694	835,836	114,239	55,280	67,089	105,674	124,000	2,490,328
August:	Month	18,770,466	17,255,034	25,538,518	3,491,530	1,700,102	2,151,120	3,193,341	3,417,000	75,517,106
	Daily average	605,499	556,614	823,823	112,630	54,842	69,391	103,011	110,226	2,436,036
September:	Month	17,984,306	16,509,120	23,640,726	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,766,012
	Daily average	599,477	550,304	788,023	113,517	52,776	66,935	107,967	113,200	2,392,199
	Total 12 months	243,877,913	229,681,577	302,768,101	42,068,537	21,157,627	22,137,142	30,765,382	47,979,600	941,435,899